The University of Chicago
FOUNDED BY JOHN D. ROCKEFELLER

AN EXAMINATION INTO THE ECONOMIC CAUSES OF LARGE FORTUNES IN THIS COUNTRY

A DISSERTATION

SUBMITTED TO THE FACULTY OF THE GRADUATE SCHOOL OF ARTS AND LITERATURE
IN CANDIDACY FOR THE DEGREE OF DOCTOR OF PHILOSOPHY

(DEPARTMENT OF POLITICAL ECONOMY)

BY

DONALD ELLIOTT BRIDGMAN

SAINT PAUL
THE PIONEER COMPANY
1909

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An Examination into the Economic Causes of Large Fortunes in this Country

Preface

There are several acknowledgments due with regard to this study which the author wishes to make. The whole of the thesis except the last chapter was written in connection with a seminar under Prof. J. L. Laughlin; and the debt resulting from the criticism and suggestions which he constantly made would be hard to estimate. The aid was as readily accepted as it was freely given; and the obligation is gratefully recognized. Mr. J. J. Hill kindly listened to the reading of Chapter II., and offered a number of corrections and suggestions which have been used. Many thanks are due him for the time he thus gave, which furnished a most valuable check upon the work. There has also been a real advantage gained from conversation and correspondence with a number of persons, personal friends and others, who have given the author the benefit of their opinions on a number of the points which the topic involves.

Introduction

The interest in large fortunes today is widespread throughout the country. There is the curiosity that attaches to men of great wealth as to other phenomena out of the ordinary and leads the papers to report regularly what Rockefeller and the Vanderbilts are doing. And then there is the desire to know how these successful men have acquired their wealth as a means of understanding the requisites of success. But apart from such reasons the question of large fortunes in the United States presents a genuinely important problem. The concentration of wealth and with it power in the hands of a few has created class distinctions of significance. That the growth has reached its present magnitude only recently makes it of even more vital importance to the democratic community in which it has taken place.

A necessary preliminary to passing on the desirability or undesirability of the tendency, or to deciding what should be done, is to study how these individual accumulations have arisen. It is apparent that this is a question of the distribution of wealth, primarily an economic problem; and it leads directly to the topic in hand, "an examination into the economic causes of large fortunes in this country."

It is not uncommon to hear the statement that the corruption and dishonesty or the ability and energy of the individual, account entirely for his wealth. But this can hardly be the case, since particular men have been as corrupt and as industrious in the past as in the present, while incomes have never been so large. It is clear, then, that we must look further to general economic change to account for a class of people unique in the history of the world in the absolute, if not in the relative, magnitude of their wealth.

The purpose is to seek the economic causes of large fortunes by a study of the history of certain large fortunes and seeing how the wealth of particular rich men was accumulated. Astor, Hill and Rockefeller have been chosen as typical. They also offer variety as to the periods and industries in which they have been engaged. The Astor fortune was founded in the early years of our national life, and has resulted largely from real estate speculation; Mr. Hill went west and entered railroading; Mr. Rockefeller's wealth presents the trust question, an engrossing problem of to-day. A discussion of causes as indicated by the study of these three cases is left to the last.

CHAPTER I.

The Astor Fortune

§ 1. The Astor fortune, dating from the eighteenth century, has the distinction of being the oldest by several decades of America's largest accumulations. Not only has it been able to survive the proverbial three generations, but has increased steadily and rapidly since its inception until now it probably amounts to $300,000,000 in the hands of two men.[1]

The genius who founded the estate was a German, a poor butcher's son, born in 1763 at Waldorf, near Heidelberg. Although the family was at odds with Dame Fortune at this time, there seems to have been titled blood in their veins; and titled blood then often signified traits similar to those of the money-makers of to-day. According to William Waldorf Astor's account, the family tree runs back to Pedro D'Astorga of Castile, who left Spain in 1085 and received a grant of lands in France.[2] Among the D'Astorgas of Spain there were two marquises of especial note: one, viceroy of Naples, 1672-5; the other in Napoleon's time, the possessor of more than thirty marquisats and comtés.[3] Heredity would naturally have an influence upon the distribution of wealth.

By seventeen years of age, discontent with life in Waldorf had moved the future founder of the estate to action.[4] He had received but a rudimentary education; and his three brothers had several years before left home to seek their fortunes. He looked to America as the place to realize his ambitions, and laid his plans accordingly. The Revolutionary War was then in progress; and since, in addition, Astor did not know our language, he turned first to London and spent three preliminary years there. These years secured him fifteen guineas, a new suit of clothes, practice

1. John Jacob Astor of New York, and Wm. Waldorf Astor of Cliveden England.

2. Pall Mall Magazine, June, 1899, vol. xviii, p. 171, Article, *John Jacob Astor.*

3. Larousse, Dictionnaire Universel, Title, *Astorga.*

4. The general story of J. J. Astor's life is, where not otherwise specified, taken from Parton's *Life of Astor*, 1865.

in the sale of musical instruments, and a knowledge of the English language and of America.

News of the Treaty of Paris came in the autumn of 1783; and early the next spring Astor landed in America. He showed already two characteristics: keenness of observation and patience in securing results. After only a few months in this country its opportunities were recognized, — "When the (Canadian) frontiers are surrendered I will make my fortune in the fur trade."[1] One can easily imagine such an observer learning the lesson of the unearned increment during the three years in London. He showed his patience in being willing to spend those years in preparation for life here. These same two traits stand out prominently in his career.

§ 2. The fortune of $20,000,000 which Astor succeeded in amassing before his death in 1848 came from two sources: first, the fur trade and, connected more or less therewith, the China trade; second, real estate investments yielding large unearned increments. It was the fur trade that yielded him his first hundred thousands; but these earnings invested largely in real estate after 1800 were thus increased to millions. We shall discuss, then, the former first; it was the basis of his fortune, and occupied his exclusive attention in the beginning.

Astor, immediately after his arrival in this country in the spring of 1784, purchased furs with the money received for the fifteen guineas worth of musical instruments he brought over with him; and, before the end of the year, he had made a hasty return trip to London to dispose of his furs at a profit, and to secure information as to the markets for that article in Europe.[2] His first employment in the United States was to beat furs at two dollars a week for a Quaker trader in New York City. But the knowledge he acquired of skins quickly secured for him an advanced salary as buyer in Canada. Soon he became independent and set up an establishment as a fur merchant. As Parton points out, the fur trade offered exceptional opportunities to such a man as Astor. While it was a most profitable business and permitted indefinite expansion, there was still chance for small beginnings, — the purchase for a trifle of a few skins from Indians coming to the city. Astor was pre-eminently fitted to the business; he worked

1. Chittenden, *History of the American Fur Trade of the Far West*, 1902, vol. i, p. 164.

2. Chittenden, *ibid.*, vol. i, p. 164.

on the basis that knowledge is power; he knew furs; he knew where to buy them cheapest; he knew what the Indians preferred in exchange; and he was notorious as a close bargainer.

During this first period, 1784-1794, Astor was evidently successful in accumulating considerable capital from his trading, because in the latter year, following the Jay treaty, he contracted with the Northwest Company of Canada to ship it large quantities of furs in London. The treaty in question was a great boon to American traders. The British military posts in the United States territory to the west were removed; and free passage into the rich fur-bearing sections of Canada was permitted. It was the "surrender of the frontiers" after which, as we have seen, Astor had prophesied to "make his fortune."[1] He extended his operations, and bought largely in Montreal to fill his contract in London. The proceeds of sales there were invested in English cutlery and woolens to be sold in New York. In this way one dollar spent on goods for the Indians finally brought ten in New York. By 1798 Astor is reputed to have been worth $250,000; and in 1800 is spoken of as "the greatest of the fur merchants."

Not content with purchase from others and incidental traffic with the Indians, he began in 1807 direct trade with the red men up the Mohawk;[2] and in 1808 organized and retained a half interest in the American Fur Company, intended to compete on a large scale with the strongly established Canadian and English companies.[3] Lewis and Clarke's expedition had given him the idea of a line of trading posts across the continent, from the Great Lakes to the Missouri and over the Rockies to the Columbia. Vessels on the Pacific would carry the furs thence to China. The story of the trial and failure of this great conception is told in Irving's Astoria. One of the ships sent around the Cape to establish the colony on the Columbia was lost at sea in 1810. The post, however, was located and garrisoned; but the crew of another vessel were soon afterwards massacred by the Indians; and the post itself was surrendered by its Canadian commander to the British in 1813. Astor stood his loss, and, after the war, was willing to go into the venture again; but, receiving no encouragement from the government, he let the matter drop. It is said on good authority that he did not expect large profits from the Astoria

1. *Supra*, p. 12.
2. Encyclopedia Americana, Article, *Astor, John Jacob.*
3. Chittenden, *ibid.*, vol. i, pp. 167-9.

enterprise for twenty years.[1] If he had been successful, one cannot tell what a fortune he would have secured from the enormous land grant he expected, as well as from the Indian trade; but the very failure shows how foresight and persistence are not enough without favoring circumstances.

The American Fur Company after the war pushed west along the Great Lakes, and by 1817 covered the territory about the Lakes and on the Upper Mississippi. An act of Congress of 1816, excluding foreigners from the United States fur trade, made the company's path easier. In 1822 it was also established on the Missouri, in spite of considerable opposition.[2] Astor's son became president of the company in 1827, but left it before the death of his father.[3]

Before 1800, Astor was interested in the China trade. He sent furs instead of money to that country in exchange for tea, a most profitable exchange, since it was then the greatest fur mart in the world. The same native shrewdness made this business also lucrative. He is said to have had for some time a monopoly of the trade in sandalwood between the Hawaiian Islands and China. He discovered the demand for the wood in China by accident, and was able to keep it secret. He had a million dollars afloat, or a fleet of twelve ships, by 1800, according to his great grandson.[4] $35,000 was the normal profit on a single voyage then, and Astor is said to have cleared $70,000 on one such voyage. Several of his ships arrived in safety during the war of 1812, returning from China with cargoes of tea; and since at the time the hostilities had greatly increased the price of that article, especially large profits were realized.[5] As a result, he was able to bear the million dollar loss in connection with the Astoria enterprise without great inconvenience. He continued in the trade for a number of years after the war.

Both the fur trade on a large scale and commerce with China, involving as they did the traversing of great distances with the faulty communication of the time, the dealing with people where life and limb, not to say property, were not always safe, the sub-

1. Hunt's Merchants' Magazine, August, 1844, vol. xi, p. 153 at p. 158, Article, *J. J. Astor.*

2. Chittenden, *ibid.*, vol. i, pp. 311-20.

3. Depew, ed., *One Hundred Years of American Commerce*, 1895, vol. ii, p. 579 at p. 581. Article, *The Fur Trade*, by F. F. Gunther.

4. Pall Mall Magazine, June, 1899.

5. Boston Advertiser, Mar. 31, 1848.

jection to constant delays and interferences by peace or war, or change of polity, and the need of considerable capital, offered great profits and correspondingly great risks. Astor secured his full share of the profits, and by shrewd management avoided many of the possible losses. Numerous stories are told to illustrate his reputation for shrewdness. At a time when no ship could leave American ports for China, Astor loaded one with the necessary articles, found a Chinaman in New York, dressed him as a noble of that country and sent him to Washington, where the Chinaman demanded that the government send him home at once. When the authorities inquired for a vessel to take him, Astor was ready; and an exceedingly profitable voyage resulted.

§ 3. While Astor is reputed to have gained some two million dollars in these ways, the investment of his returns in real estate was by far his best paying field of operations, and increased his fortune to $20,000,000 before his death. The general lines of his investments are fairly clear. Property in the built-up section of the City of New York he would often sell rather than buy. But farms and unoccupied land, in what were then suburban or even rural districts higher up the island, he purchased on every occasion, and at farm or suburban prices. He had an unconquerable faith in the future development and expansion of New York City; and with the patience of one sure of himself and willing to wait, he deliberately disregarded present returns on his investments in the shape of rent, for the sake of the unearned increment. Mr. Hendrick, who has evidently examined the real estate records, tells of "dozens of lots" bought by Astor on lower Broadway for $200 to $300 which are now worth $300,000 to $400,000; also of an East side farm which cost $20,000 and now would be a fortune of $8,000,000.[1] He secured one-half of Governor Clinton's estate for $75,000, the annual income from which today is five times that amount.[1] A farm bought in 1811 for $4,500, in 1899 was worth $7,000,000.[2] Aaron Burr, being heavily in debt, in 1804 sold the 62-year lease of Richmond Hill, which he held from Trinity Church, to Astor for $160,000. It was soon yielding $25,000 a year, having become a desirable residence district.[3]

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1. Burton J. Hendrick, *The Astor Fortune*, McClure's Magazine, April, 1905, vol. xxiv, pp. 563-78.

2. Pall Mall Magazine, June, 1899. Article by W. W. Astor.

3. Burton J. Hendrick, *The Astor Fortune*, McClure's Magazine, April, 1905.

Astor evidently was not content with such property as naturally fell into his hands. He pursued with relentless energy whatever he wanted. Money was loaned on mortgages, which were foreclosed at favorable opportunities. During the war of 1812, and especially at the crisis of 1837, Hendrick says, Astor was busy as at a harvest, foreclosing on and buying in at a low figure the property of hard-pressed debtors. During the latter period he was complainant in sixty cases.

His ability in obtaining land is shown in the cases of the Morris estate[1] and the Philipse Manor[2] in Dutchess and Putnam counties, New York, the latter containing about 800 square miles. He discovered that while the former holders had been attainted during the Revolutionary War, yet the heirs to the two estates had a valid claim to title. This he bought at a low figure; and the courts sustained his claim, to the great discomfiture especially of those living on the former well-settled property in the belief that it was theirs. The title to the Morris estate was purchased by the state for $500,000, five times what Astor paid for it. The manor was parceled and sold at a large advance before 1822.

Astor was not only expert in securing such property as he wanted; he also knew how to keep it. True, the country estates above-mentioned were sold, as was some property in the city; but the fact that a great part of the original farms purchased early in the century are today held in the family, testifies strongly to his tenacity and his realization of the possibilities of the unearned increment.

It is not clear how far Astor aided in the improvement of his land—as regards his successors we know more. It is stated, however, that he would not build on his property, but only lease it, letting the lessee put up the house, which reverted to Astor when the lease expired.[3] It seems a short-sighted policy for one of Astor's capacity; yet he had, according to Parton, a streak of closeness that often stood in his way and might well have led him to just such a course.

Astor had a keen eye for the future, energy and patience. The purchase of United States securities during the war of 1812 at 60 to 70, which rose later to 120, was typical of him.[4] He was, perhaps, as great a trader as a land speculator; but the latter

1. Parton's *Life of Astor*, 1865, pp. 62-66.
2. N. Y. Tribune, Jan. 17, 1887.
3. B. J. Hendrick in McClure's Magazine, April, 1905.
4. The Boston Advertiser, Mar. 31, 1848.

field offered much the greater reward. He left his son one of the largest fortunes of the day, invested in secure form, and a still more valuable tradition and precedent for its management.

§ 4. William B. Astor was born in 1792, and until sixteen years of age attended the public schools of this country and assisted his father in the fur and shipping business.[1] But John Jacob wanted a thorough education for his son, which he believed was not to be obtained on this side of the Atlantic. He was, therefore, sent to Heidelberg to complete his schooling.[2] On his return, the son naturally entered business with his father; and, as the latter retired from an active interest in affairs some twenty-five years before his death, William Astor had a long experience in the management of the estate before the twenty millions came into his hands in 1848. His Uncle Henry, dying childless some time previously, had also left his fortune of $500,000 to his nephew.[3]

The second Astor did not inherit his father's aptitude for trade. He was, however, a hard worker, and paid close attention to business and to the amassing of the fortune throughout his life. His investments were safe rather than speculative. The Spectator calls him "the supreme example of the beaver capitalist."[4] He did not have his father's reputation for driving a hard bargain; he paid well, and seems to have attached men to his service.[5]

W. B. Astor had only a life interest in the property,[6] since the founder of the estate had devised it to his grandchildren, leaving merely the management and income to his son. The money thus received, however, was carefully used to acquire more real estate, to put up houses and to purchase shares of sound corporations. He bought many lots below Central Park between Fourth and Seventh avenues,[7] but was more of a builder than his father. Between 1860 and 1873 his surplus capital was largely used to put up houses on improved but vacant land he possessed, till most

1. N. Y. Times, Nov. 25, 1875.
2. *Ibid.*
3. London Times, Dec. 13, 1875.
4. London Times, Dec. 14, 1875
5. *Ibid.*
6. The residuary clause in J. J. Astor's will leaves his son William B. Astor a life estate in the residue, with power of appointment among his children and their issue. Parton, *Life of Astor*, 1865, pp. 97-98. Parton estimates the dispositions, aside from the residue, at two millions. *Ibid.*, p. 83.
7. N. Y. Tribune, Nov. 25, 1875.

of it was built up.[1] He is said to have owned nearly 1,000 houses at the time of his death in 1875. "As a landlord he gained the reputation of a prompt, obliging, businesslike man."[1] His security investments were chiefly in railroads and coal companies. Among these were the New York Central and Hudson River, Harlem, New York and New Haven, Pennsylvania, Delaware, Lackawanna and Western[2] and Illinois Central. He did not serve as director in any of these, but left that office to his son.[2] Considering the manner in which most of these stocks rose in value following this early period of probation, one would say that he had as much of an eye for future increases of value in whatever form of property they occurred as had his father.

W. B. Astor had control of the estate for twenty-seven years, 1848-1875; and during this period it is supposed to have increased from $20,000,000 to $55,000,000.[3] It was a time of general growth and prosperity; and John Jacob Astor's will providing that the property be preserved intact till his son's death, *per se*, insured a large increase in the estate. Added to this was the son's constant and industrious management of the property and his careful and intelligent investment of the proceeds. As a result the fortune passed not only unscathed but rather greatly increased through the critical second generation.

§ 5. Two sons inherited the bulk of this vast sum, or rather a life interest in it,[4] for the estate was again left to the grandchildren. The elder son, John Jacob II, received two-thirds; the younger, William, one-third.[4] The family tradition as to its management, now well established, continued to be followed. Purchases in anticipation of popular demand were made well up town, along Harlem River and on the Riverside Drive.[5] John Jacob Astor II's last purchase before his death in 1890 was on Third avenue between 66th and 67th streets.[5] With the subsequent increase of values in those localities they reaped their harvest. $6,000,000 is said to have been kept on deposit available for any real estate opportunity that might come up.[6] Their father's

1. N. Y. Tribune, Nov. 25, 1875.
2. *Ibid.*
3. The figures, $45,000,000 and $55,000,000, are mentioned in the London Times, Dec. 14, 1875, and Feb. 25, 1890. They are more conservative than the $100,000,000 estimate in the N. Y. Times, Nov. 25, 1875.
4. N. Y. Times, Feb. 23, 1890.
5. N. Y. Herald, Feb. 23, 1890.
6. N. Y. World, Feb. 23, 1890.

safe policy of security investments was also followed. The Herald in 1890[1] outlines it:

"The Astors have for twenty-five years been among the largest purchasers of the city's sinking fund securities. . . . They also own nearly the entire issue of the Columbus and Hocking Coal Company's bonds and a part of the stock of about every old bank in the city. J. J. Astor bought conservatively of a large number of well-paying securities, which, while not gilt-edged, paid bigger dividends than government or other similar bonds. Among other companies the bonds of which he held were Delaware and Lackawanna, Western Union and insurance stocks. He was one of the principal owners of the United States Trust Company."

This older son was a soldier in the Civil War, was interested in politics, and pursued a progressive business policy. The Real Estate Exchange of New York City at the time of his death paid him the following tribute:

"In his relations with the real estate market Mr. Astor held an almost unique position. He was a large buyer, but he rarely sold. His wealth was liberally used in the building up of the neighborhoods where he was an owner. His rent roll was the largest in the city, and his name, as a landlord, was a synonym for liberality and good faith."[2]

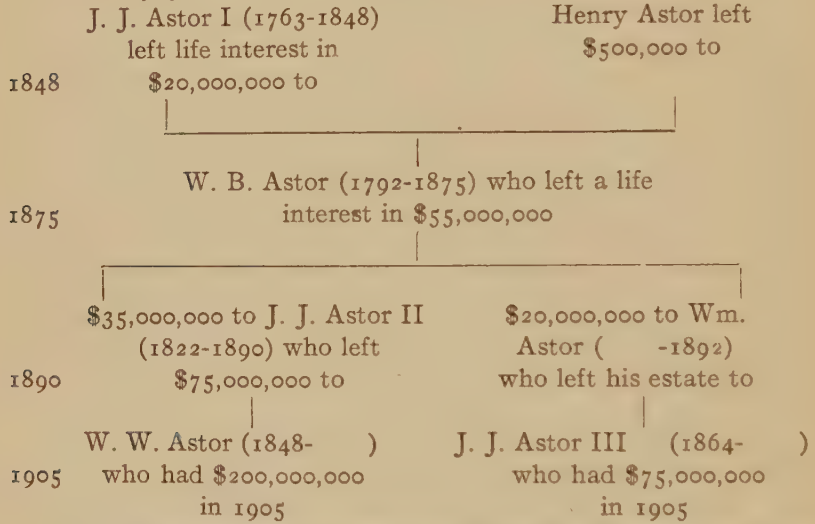
The $35,000,000 he is supposed to have received from his father, in fifteen years he increased to a reputed $75,000,000.[3]

His son, William Waldorf Astor, inherited this in 1890. He was born in 1848, studied abroad, took the law course at Columbia, and practiced in New York for several years, acquiring knowledge and experience preparatory to the management of the estate.[4] His cousin, John Jacob Astor III, a graduate of Harvard, traveler, author, inventor, and director in numerous companies,[5] inherited the smaller portion of the estate from William Astor. Under these two men the fortune has flourished. Some property in the lower part of the city has been sold: the old Astor homestead, 585 Broad-

1. Feb. 23, 1890.
2. N. Y. Tribune, Mar. 5, 1890.
3. N. Y. Tribune, Feb. 23, 1890.
4. N. Y. Tribune, May 21, 1893.
5. H. H. Lewis, *The Quiet Control of a Vast Estate*, World's Work, Nov., 1902, vol. v, p. 2750. He gives the following list of companies in which J. J. Astor III was director at the time: Western Union, Equitable Life, New York Life, Illinois Central, Mercantile Trust Co., Title Guarantee and Trust Co., Astor National Bank, Plaza Bank, National Park Bank, Delaware and Hudson Company.

way, went in 1893;[1] in 1898, forty tenements near First avenue and Fifth street were disposed of.[2] Purchases of large tracts in the Bronx have been made. Money has been spent freely for improvements; witness the hotels Waldorf-Astoria, Knickerbocker, St. Regis, etc., and the large apartment houses which have gone up. In 1905 Henry Clews estimated W. W. Astor's fortune at $200,000,000, and J. J. Astor III's at $75,000,000.[3]

The following table shows the reputed increase in the Astor wealth to 1905:


J. J. Astor I (1763-1848) left life interest in
1848 $20,000,000 to
Henry Astor left $500,000 to
W. B. Astor (1792-1875) who left a life
1875 interest in $55,000,000
$35,000,000 to J. J. Astor II (1822-1890) who left
1890 $75,000,000 to
$20,000,000 to Wm. Astor (-1892) who left his estate to
W. W. Astor (1848-)
1905 who had $200,000,000 in 1905
J. J. Astor III (1864-)
who had $75,000,000 in 1905

§ 6. Several fortunes almost as large or larger than the Astors' have been acquired in less than half the time; but, as we noted at first, stability of increase rather than rapidity is the characteristic of Astor wealth. The ways in which this has come about are perhaps clear. A beginning was made by John Jacob Astor in a characteristically American way,—through shrewdness and pluck in fields of enterprise then open to a trader; but the means since used by him and his successors to "found and perpetuate a family" resemble the customs of Europe's wealthier class as much as anything typically American. The estate was first put into a permanent form, land and safe securities, and has so remained. Its dissipation has been prevented by leaving the

1. N. Y. Tribune, Aug. 5, 1893.

2. N. Y. Tribune, May 15, 1898. 'The secret (of this sale of tenements) probably is that he will reinvest in other real estate, as these were becoming less remunerative and needed improvement.'

3. Chicago Record-Herald, Jan. 21, 1906.

great bulk to one son, except for the division in 1875, by the devising of a life estate only to the children by the first two generations, and by the education of the son in a way to prepare him for care of the property, and by the growth of a "family tradition" to guide him. What is more a question of blood, there has been a "conserving genius in each generation."[1] The faculty of judging accurately of the future, of making safe and remunerative investments from the long-time standpoint, and of avoiding great speculative losses, seems to have been present to a considerable degree in each member of the house.

Such qualities, lasting over a century, would have secured a family considerable wealth almost anywhere under free institutions and in times of peace and order. That the fortune has reached such an enormous figure, however, must be assigned to conditions favoring a general great increase of wealth in this country, and more especially to the particular causes which have built up New York City. John Jacob Astor might have seen in imagination a London of the eighteenth century on Manhattan Island; he could not have foreseen New York of today. Rapid transit, high buildings,[2] the great port of entry made possible by the increased commerce of steam—these are some later developments which, incidentally, have given many of their millions to the Astors.

1. H. H. Lewis in the World's Work, Nov., 1902.
2. Cf. B. J. Hendrick, in McClure's Magazine, April, 1905

CHAPTER II.

The Fortune of J. J. Hill

§ 1. The second fortune chosen for the study of the process of accumulation was that of J. J. Hill. Although Mr. Hill is now so closely associated with the railways of the Northwest and although his wealth originated in connection with them and has grown chiefly from the same source, yet he was thirty-nine years of age[1] and had been twenty years in the West before he took the step which brought him into prominence as a railroad man. After a glance at these twenty preliminary years, we may take up his entrance into railroad management and into the millionaire class. A discussion follows of the subsequent constant enlargement of his field of operations resulting in an ever growing fortune until he becomes the great factor in the business world which he is today. We may then conclude with an examination of the methods characteristic of him as a railroad man which have contributed largely to his fortune.

§ 2. It is necessary to go back for a beginning to the decade before the Civil War, to the time of rapid and feverish inrush of settlers from the East into the Mississippi Valley. The more active men did not stop with Illinois or Iowa, but pushed on. Some went to Kansas to save it for the North; others passed up the convenient "Father of Waters" to where, in the forest and among the Indians, they founded towns and cleared up farms and made of Minnesota Territory a state.[2] The steamboat lines on the upper Mississippi were heavily laden in the early fifties with passengers and freight. During the summer of 1856 one of these steamers brought James J. Hill to the new and booming town of St. Paul. He was a young man of eighteen, with brains and brawn

1. Mr. Hill was born near Guelph, Ontario, Sept. 16, 1838.

2. Minnesota was organized as a territory in 1849, and became a state in 1858. The following shows its growth:

Minnesota	1850	1860	1870	1880	1890	1900
Population:	6,077	172,023	439,706	780,773	1,301,826	1,751,394
Rank in Union:	36	30	28	26	20	19

Twelfth Census, Population, vol. i, pp. 2-3.

but no money, who had come from his home in southern Ontario to grow up with the West.

His first employment was to handle freight on the levee for the various steamboat companies.[1] He was reliable and industrious, and if necessary would work overtime. This policy brought its follower sixty-five dollars a month where others were getting thirty.[2] We find, what might be expected from a man of this stamp, that in 1866 he secured and held for two years an exclusive contract with the St. Paul and Pacific Railroad for transferring shipments between its depot and the river. He also dealt in coal, and was the first one to bring that article to St. Paul.

The prosperous year, 1870, was the occasion for Mr. Hill's entering on a larger venture,—a line of steamers on the Red River from Moorhead, Minnesota, to Winnipeg. As the former point was the western terminus of the Northern Pacific, through connection between St. Paul and Winnipeg was obtained. He encountered competition from the beginning, since Norman W. Kittson, agent of the Hudson Bay Company at St. Paul, had at the time a steamer on the same river. The next year, however, the two lines consolidated. Mr. Hill was gaining years of experience in transportation as preparation for his later work.

Meanwhile the country, checked in its growth by the Civil War, began again to expand; and population pushed west with new and irresistible vigor. The great fertility of the soil in these new regions was becoming more and more widely known. Such things did not escape Mr. Hill's attention. He was studying the country, and from personal observation[3] and in other ways gained great knowledge of the character of the soil in different districts, the rainfall, temperature and other matters of climate. It was on the basis of such knowledge of these fundamental characteristics that he could, after accurately judging the possibilities and necessary future of the country, appreciate its needs and assist

1. The St. Paul Pioneer Press, Dec. 15, 1905, in a speech by Joseph McKibbin on "Mr. Hill and the Northwest."

2. Mr. T. B. Walker, of Minneapolis, who knew him at the time, tells this.

3. He tells of traveling alone through the fertile regions of northwestern Minnesota when there were no houses for a hundred miles. In the ruts of the roads of the Red River Valley where the wagon wheels had broken up the ground, the grass was growing to a great height. Mr. Hill saw in this an indication of what the land would yield if cultivated; and he judged rightly therefrom as to the possibility of agriculture in this region as opposed to those who held it to be too wet and sour.

its development in a very intelligent way. In brief, what it required was that the current of population moving westward along lines of least resistance, waterways and railways, be turned north into the fertile valley of the Red River. A railroad was needed.

§ 3. But at this time came the crisis of 1873, and following it, several years of depression. One of the numerous concerns which failed was J. Cooke & Company, of Philadelphia, who had in charge the finances of the fragmentary St. Paul and Pacific. With this support removed, building on the line practically stopped, and part of it passed into the hands of a receiver.[1] The name and bonded debt were the biggest things about the road. There were but 383 miles of track: the line to Breckenridge on the western boundary of Minnesota was 207 miles; another branch from St. Paul up the Mississippi and then west a short distance added 111 miles; and an isolated section in the north of the state completed the existing road.[2] Yet bonds for a par value of over $25,000,000 had been issued by the road, and were held chiefly in Holland. The State of Minnesota had provided for the line a land grant, of which, in 1879, there still remained unsold nearly 2,000,000 acres;[3] but an act passed early in 1878 declared much of this forfeit if the track were not all down before January 1, 1880.[4] The St. Paul and Pacific was in a state of collapse. Net earnings on the main division for the years 1872-5 varied between $32,000 and $77,000, and in 1876 and 1877 recovered to but $220,000 and fell again to $139,000; and while the branch line showed a better average, the highest mark it reached during the whole period was $152,000.[5] Sections of the road were operated only a part of the year; and practically no interest could be paid on the bonds.

But Mr. Hill saw in those incomplete pieces of track, which had impoverished their owners, possibilities of a great future, for here was the needed railroad. The worst of the crisis was now

1. The Financial and Commercial Chronicle, July 5, 1879, quoting from a current number of the St. Paul Pioneer Press. Hereafter the former paper will be referred to merely as the Chronicle.

2. Poor's Manual, 1878, pp. 785-7.

3. This was the amount of land behind the first mortgage bonds issued by the road, the St. Paul, Minneapolis and Manitoba, which later bought the St. Paul and Pacific (cf. p. 27), and evidently was all that was handed over in that transaction. *Vide* Poor's Manual as in note 2, for a partial statement of the land of the St. Paul and Pacific.

4. The Chronicle, July 5, 1879.

5. Poor's Manual, 1880, pp. 828-9.

past; and extension of the road would not only secure the land grant from the state, a minor matter, but would be followed by a great inrush of settlers and by general prosperity.

Mr. Hill resolved to buy up the line.[1] But he and his partner in the steamboat business, Mr. Kittson, did not have the capital needed to secure control of this property which seemed so very desirable to them. Moreover, at this time (1876) Canada was on an assured gold basis, while in the United States greenbacks were the currency with gold at a premium; and the former country for this reason enjoyed better credit abroad. The Dutch bondholders in control of the road would sell more willingly and at better terms to a Canadian, and had inquired of Donald Smith, the Hudson Bay Company's agent at Winnipeg, if he were interested in the prospective purchase. He told Mr. Hill about this inquiry; and the latter then proceeded to enlist both him and Mr. Stephen, president of the Bank of Montreal, in the enterprise.[2]

This successful enlistment was a crucial point in Mr. Hill's career. Without such assistance he could have done comparatively little. This gave the opportunity to demonstrate his ability as a railroad manager; and since then the growth of his fortune has been in large part the result of that ability. No doubt, capital might have been obtained elsewhere; but, as above mentioned, it was desirable to have Canadians interested in the road; and, at any rate, it was necessary to find someone not only with confidence in the affair, but also with capital. It is difficult to analyze the motives inducing a person to invest in a venture. The capitalists' own knowledge of the situation in the West and of Mr. Hill's fitness to handle it, were probably the chief motives in the present case; and yet his personal statement of the proposition could hardly fail to be a factor in bringing about the final decision. If this be true, then Mr. Hill's power of convincing others that he would be successful has been a cause of his success.

The four men, Messrs. Hill, Kittson, Smith and Stephen, each contributed his quarter to a pool for buying control of the road, of which the amount actually used was about $1,000,000.[3]

1. No doubt some such idea was in Mr. Hill's mind many years before its realization; but a definite plan seems to have taken shape about 1876. This is the date given by Mr. Farley in Farley v. Kittson, 120 U. S. 303 at 304. For the final decision of this case, see 150 U. S. 572.

2. Statement by Mr. Hill.

3. Mr. Hill thus invested $250,000, which was probably the major portion of what he had made up to date as freight handler, coal dealer, and part owner of a small steamboat line.

After some bargaining, an agreement was reached with the bondholders, February 8, 1878,[1] whereby 85 per cent of the bonds of the St. Paul and Pacific,[2] whose total par value approximated $27,000,000,[3] and which, with accrued interest, represented a still larger debt, were obtained for from $7,000,000 to $8,000,000.[2]

ST. PAUL AND PACIFIC BONDS.[4]

I	II	III	IV
Name of Bond	Amount Outstanding	Quotation, N.Y. Stock Exchange Sept. 28, 1877 Bid	Purchase Price Feb. 8, 1878
1st sec. 7%.....	$1,096,000	45½	75
2d sec. 7%.....	1,700,000	18	30
Bonds of 1869.....	5,700,000	20	35
Consolidated.....	1,114,000	....	28
St. Vincent & Brainerd extension.....	15,000,000	6⅝	13¾
Total.....	$24,610,000	....	....

The purchasers intended to complete the foreclosure proceedings already begun as soon as practicable and organize a new company to take over the road; and their agreement with the sellers provided that "payment for the bonds bought shall be made six months after the foreclosure at the option of the buyers in gold coin, in 7 per cent gold bonds of the new company at par with a premium of $250 preferred stock for each $1,000 bond, or in the same bonds at 90 without the stock premium."[5] The Dutch holders were willing enough to sell control of what was to them a

1. The Chronicle, Aug. 10, 1878.

2. Statement by Mr. Hill.

3. Cf. Column II of above table. The table does not include two small issues of $120,000 and $366,000, on which interest had been paid and which were apparently not bought up by Mr. Hill and his associates, nor a fourth mortgage on the main line of $1,500,000 outstanding. These make the total $26,596,000.

4. Column III was found in the quotations of the Chronicle given Sept. 29, 1877. The issue of Aug. 10, 1878, gives the purchase price of Column IV, the figure 13¾ being a correction made by Mr. Hill. The Investors' Supplement of the Chronicle for Jan. 26, 1878, was consulted for Column II. This was about the time of the purchase. The bond issues mentioned in note 3 are not given, as their purchase price was not found.

5. The Railroad Gazette, March 22, 1878.

"white elephant" in the frozen north,[1] at over 60 per cent in advance of the market price of the securities in question.[2] On the other hand, considering the privilege of paying in bonds and the subsequent value of the property it was a great bargain for the purchasers.

No time was lost after control of the road was gained. Reorganization was delayed, as foreclosure required time; but the receiver of the St. Vincent and Brainerd extension,[3] with the authority of the bondholders and permission of the court, issued certificates to persons in Montreal for funds to extend the road. During 1878, 112 miles were thus constructed at a cost of $14,000 per mile.

At the same time this group of men was buying many of the St. Paul and Pacific stocks and bonds not yet in their possession, and was securing as complete control of the road as possible.[4] They organized, May 23, 1879, a new company, the St. Paul, Minneapolis and Manitoba Railway Company, which by buying up the various divisions of the St. Paul and Pacific as the mortgages on them were foreclosed, on June 7 took over the whole of the former road and its recent extensions. Mr. Hill was elected a director and general manager of the new company.[5] Fifteen millions of capital stock were issued, and eight millions of 7 per cent first mortgage gold bonds which could be retired by lot at 105 with the proceeds from land sales. The proceeds formed, in fact, a special sinking fund for the redemption of the bonds which made them doubly safe.[6] These gilt-edged securities, nearly always quoted several points above 105, were used to pay, according to

1. In this connection we must recall the condition of the road, *supra*, p. 24, and not only that earnings were a negligible quantity, but that fresh sums had to be borrowed from time to time on bond issues, to make the extensions necessary to save the land grant.

2. *Vide* Columns III and IV in table, p. 26. Mr. John Knuppe, of St. Paul, who knew personally the situation, says that the bondholders fixed their own price, considerably above the market price, and thought by many entirely too high.

3. This was the part of the road which passed into receiver's hands in 1873. *Vide supra*, p. 24.

4. The purchase of the Litchfield interests is mentioned in the Railroad Gazette, Feb. 21, 1879.

5. The Chronicle, May 31, 1879. He was made president of the road in 1882, and served in that capacity till the organization of the Great Northern.

6. Poor's Manual, 1880, p. 827.

agreement,[1] the remainder of the sums due the former holders of the St. Paul and Pacific bonds from whom they had been purchased by Mr. Hill and his associates. The new seven per cents were also exchanged for the certificates issued by the receiver of the St. Paul and Pacific in 1878.[1] In this way $6,780,000 of the first mortgage bonds were issued;[2] and all debts of the St. Paul and Pacific taken over by the new company were thereby extinguished. For further extension of the road funds were easily obtained by the sale of second mortgage six per cents of an authorized issue of $8,000,000.[3] These were always quoted over 90, and after August, 1880, over par. As to the fifteen millions of capital stock, about $11,200,000 of it was divided equally among the four men who bought the road and organized the new company—Hill, Kittson, Smith and Stephen—so that each received $2,800,000 of stock.[4] The rest was kept in the treasury to be sold later for funds to extend the road.

This identifies Mr. Hill's fortune with the fortune of the road. A study of the latter is a study of the former. Not only has his wealth consisted largely of these securities, but it is a matter of common report that the management of the Manitoba and of its successor, the Great Northern, has rested almost exclusively with Mr. Hill, that Manitoba or Great Northern policy is Hill policy. Most of the other large stockholders have lived out of the country in England or Canada,[5] or in New England and New York. They have drawn their dividends and left the management to the president;[6] who has never accepted a salary for the work. This state of facts makes the study of his fortune easier: we may take the fortunes of the road, knowing that they are Mr. Hill's, and may examine the causes of its prosperity with the assurance that in as far as these causes lie in the general policy of the road they are traceable to Mr. Hill. This is the reason for turning attention to the management of the Manitoba and its success,—the close identification of these with Mr. Hill.

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1. *Vide supra*, pp. 26-27.
2. The Chronicle, Aug. 30, 1879.
3. The Chronicle, Nov. 15, 1879.
4. This is the statement of Mr. Hill. The allegation of Mr. Farley in Farley v. Kittson (*vide* p. 25, note 1) is that the joint share of Messrs. Kittson and Hill was 57,646 shares of stock, which practically corresponds with the above. 120 U. S. 303 at 308.
5. Lord Strathcona and Lord Mount-Stephen.
6. Mr. James, of New York, for instance, speaks strongly of the confidence with which Mr. Hill is given a free hand.

§ 4. The St. Paul, Minneapolis and Manitoba was prosperous from the start. Mr. Hill was not mistaken in his judgment of its prospects. The first extension, built, as we have seen,[1] while the road was still the St. Paul and Pacific, ran north from Breckenridge to the Canadian border. The 75 miles of line in Manitoba needed to complete rail connection with Winnipeg, also were finished in 1878 by the Canadian Pacific. From its completion until 1883 enormous quantities of freight passed over this through route to Manitoba because of the great "boom" then in progress in that province, and because of the demand of the Canadian Pacific for construction materials to extend its line west. In the wheat districts of Minnesota and Dakota many branches were built as feeders, and to encourage settlement. The following table shows the growth:[2]

THE ST. PAUL, MINNEAPOLIS AND MANITOBA RAILWAY.

	1878	1880	1881	1882	1883	1884
Mileage	407	656	702	926	1,203	1,378
Net earnings	$473,977a	$1,584,817	$1,906,756	$3,308,917	$4,689,779	$4,449,251
Dividends	.....	.....	.....	6½%	9½%	8%
Capital stock	.....	15,000,000	15,000,000	15,000,000	20,000,000	20,000,000
Bonded debt	.....	16,324,900	18,107,700	18,646,000	20,791,720	31,368,000

a Earnings for 441 miles of road.

In the period 1880 to 1883 the mileage was nearly doubled, the road was practically rebuilt, iron rails were replaced with steel, equipment was quadrupled and extensive improvements made. At the same time there was but $4,000,000 added to the bonded debt and $5,000,000 to the capital stock. This was the result of the lavish use of earnings for improvements,[3] which is seen in the fact that operating expenses increased enormously, approximately equaling net earnings in each of these years. Not only this, but during the same three years a profit and loss account of + $5,671,976 accumulated.

Naturally the stock rose greatly in value. In October, 1880, it was quoted at 67; in August, 1882, at 146.[4] The road was worth

1. *Supra*, p. 27.

2. From Poor's Manual, 1879, pp. 791-4, and 1885, p. 726.

3. The Chronicle, Sept. 2, 1882, quoting from the Manitoba Annual Report for the same year. The Chronicle, Aug. 11, 1883, published a statement of Pres. Hill's, that 210 miles were built and $1,700,000 spent on equipment without bond issue.

4. These quotations are from the Chronicle. Oct. 1880 is the first time the stock is there quoted.

much more than its capitalization, stocks and bonds; and dividends had not been paid during the first two years of its existence. The $5,000,000 new stock issued in 1882, was offered at par to stockholders of record to one-third the amount of their holdings.[1] It was not a bonus. Under these circumstances the directors conferred upon the stockholders of record of May 1, 1883, the privilege of acquiring at 10 per cent of their par value, consolidated mortgage 6 per cent fifty year gold bonds to the amount of fifty per cent of their stock holdings.[2] This issue of bonds, in contrast to the stock mentioned above, subscribed for at par, was a scrip dividend of 45 per cent. "Manitoba" rose from 145 to 167 as the news of this dividend got abroad, falling to 123 ex-privilege and then recovering slightly. The scrip dividend of 45 per cent caused the stock to fall but 22 points. It remained above par because property was behind the issue.

But how did these events affect Mr. Hill's fortune? The $250,000[3] originally contributed by him to the pool for buying the bonds of the St. Paul and Pacific, reappeared with the organization of the Manitoba, in 1879, as $2,800,000 stock[4] in that railroad, quoted considerably under par. Let us suppose that during the years of prosperity which followed, he merely retained his stock and subscribed for the new stock and bonds to which 28/150 ownership entitled him. This certainly ought not to be an overestimate of the increase in his wealth. Of the $5,000,000 stock issued he could purchase $933,333, increasing his holdings to $3,733,333. Twenty-eight one hundred and fiftieths (28/150) of the $10,000,000 bonds gives $1,866,666 as Mr. Hill's share. Remembering that the stock was quoted near 125 and the bonds over par, he would hold in June, 1883, in market value of these two securities, over $6,500,000. At the same time it would have been necessary to borrow $933,333 to subscribe for the new issue of stock,[5] and $186,666 to pay the 10 per cent on the bonds. On the other hand, dividends of 6½ per cent on $2,800,000[6] and 9½ per cent on $3,733,333[7] would have been paid. They would bring in $536,666, but still leave $583,333 of debt. By July 18,

1. The Chronicle, June 10, 1882.
2. This action was taken April 12, 1883. The Chronicle, April 14, 1883.
3. *Supra*, p. 25.
4. *Supra*, p. 28.
5. It was issued at par.
6. $182,000.
7. $354,666.

1883, Mr. Hill's share would thus amount to $5,600,000 par value of 6 per cent securities, on which there would be a debt of $583,333.

§ 5. Mr. Hill's fortune thus became identified with the railroad at its purchase and reorganization. The next question is, what caused the rapid rise in the value of the company's stock and its great prosperity? As a preliminary condition or cause, we must recognize that the market for securities, especially for railroads, was at the time of the organization of the road in 1879, favorable, and was improving. Capital for the extension of the line was obtained easily and at comparatively low rates.[1] Given this satisfactory money market, we may turn to the all-important matter of traffic. It is well known that because fixed charges form so considerable a part of a railroad's expenses the *sine qua non* of large earnings is heavy traffic, even at low rates. A subsequent table gives both the average rate per ton-mile and the density of traffic.[2] The latter item we notice is large, especially in 1883, and that, too, with a railroad whose mileage was being rapidly increased each year. It had the tonnage and was prosperous. The reasons given in the Chronicle[3] are: "First, the revival of business in the United States following 1878 and the resulting activity and expansion; second, the road was extended to the (Canadian) frontier and was in a position to command traffic;[4] third, the territory through which it passed developed great fruitfulness, and on account of desirability attracted settlers

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1. *Vide supra*, p. 28.

2. Page 41.

3. Sept. 22, 1883.

4. One point in this regard:—the Manitoba had direct connections with the Canadian Pacific, and so the following state of affairs would be favorable to it. The Canadian road secured several privileges from the government, and one of these worked to protect its territory in the West from invasion by U. S. roads. ".....under Dominion law, in order to prevent American lines from being extended into the province (Manitoba), no railroad competing with the Canadian Pacific could be built within 15 miles of the international boundary." Villard, *Memoirs*, 1904, vol. ii, p. 307. Mr. Villard is writing of the year 1883, and goes on to tell how in that year the Northern Pacific, of which he was president, planned to get to Winnipeg by carrying passengers and freight in wagons across the forbidden fifteen miles and then building a railroad for the rest of the distance. But the scheme proved impracticable, and the construction which had taken place was sold out to the Manitoba.

beyond any other section of the country;[1] fourth, the unparalleled movement of immigrants to Manitoba accompanied by the building of the Canadian Pacific and the great 'boom' to which this gave rise."[2]

The return of good times to the country and the movement west, together with the building of the Canadian Pacific and the great growth in the population and trade of Manitoba, though perhaps exceeding in degree his expectations, were no doubt foreseen by Mr. Hill, and were great factors in his determination to buy the St. Paul and Pacific. Such a prosperous beginning was of immense importance to the road.

"The difference between success and failure in a border railroad may well be the length of time occupied in bringing the country on its line under cultivation. Certainly what seemed the too numerous roads built in Western Minnesota and Eastern Dakota last year have received a favorable start."[3]

The "start," however, was not the result of accident only, but of the imaginative power to see the future and courage in one's convictions. It required action to be prepared for the opportunities, to make the most of them and double or treble their value.

"Or say, the foresight that awaits
Is the same Genius that creates."[4]

Mr. Hill was not lacking in this quality of enterprise. He knew the country and put the line through the most fertile part. Two sections of the road were run through the rich valley of the Red River, paralleling the river on either side for most of its length.[5] The productive mileage was very large. Mr. Hill was able to place these lines alongside the river without fear of water competition, since his experience with steamboats there had shown him of what they were capable. Results have proved this judgment correct. Again, he interested Canadians in the road and himself entered the syndicate for the construction of the Canadian

1. 'Dull times (as those following '73) when profits in business are small and men are failing, serve as an impetus to take up land as a surer means of livelihood. The panic stimulated the movement west.'—Mr. Hill.

2. In 1883, 48% of the traffic came from Canadian sources.

3. R. R. Gazette, Aug. 13, 1880. It goes on to explain the situation: "Without being in any way extraordinary, the crop (in that region) is satisfactory, and even at low prices is likely to encourage further immigration and production." This is one cause of the "favorable start."

4. Emerson, *The Conduct of Life*.

5. The Northern Pacific crossed it at right angles.

Pacific, thus insuring the harmonious operation of the two lines. This would be of great importance to the Manitoba because of the large part of its traffic coming from Canadian sources.[1] This location of lines, gaining the good will of influential Canadians and fixing rates so that the grain could move,[2] seem almost faultless preparation for the control of western traffic and the increase of settlement; and of the opportunity which others might easily have let pass by without much improving it, he made great use. The railroad was there and in the right place; traffic flowed naturally over it; and new farms sprang up along its lines. The man behind the "boom" was a great element in its success.

§6. Returning to the story of the road,—Mr. Hill's road,—in 1884 came a period of depression; business was less active; the completion of the Canadian Pacific west from Lake Superior in 1883 enabled it to carry its own construction material; and as a result the tonnage of the Manitoba fell off temporarily.[3] But the loss was not serious; and a 6½ per cent dividend was paid in 1885.[4] The prosperity of the road was based on more lasting causes,—the crops had to be moved; and they furnished a constant source of revenue.

During this depression Manitoba stock fell less than some of the old established securities.

1. *Vide supra*, p. 32, note 2.
2. For a discussion of Mr. Hill's policy with regard to rates, *vide* p. 44.
3. The Chronicle, Sept. 22, 1883.
4. Poor's Manual, 1886, p. 60.

HIGH AND LOW POINTS ON THE NEW YORK STOCK EXCHANGE FOR THE MONTH GIVEN.[1]

	1883		1884		1885		1886	
	June	Dec.	June	Dec.	June	Dec.	June	Dec.
St. Paul, Minneapolis & Manitoba	115½ to 124¾	94 to 101¾	78½ to 92	77½ to 86	83¼ to 101	106⅝ to 111	115 to 117	113 to 118¼
Northern Pacific, Preferred	87 to 90⅝	49¾ to 64⅞	37¼ to 50⅛	38¾ to 42¼	37 to 40⅛	57 to 65¼	55⅞ to 61⅝	58 to 66½
New York Central	118½ to 125	111½ to 118⅝	94¼ to 108⅝	83¾ to 92⅝	81¾ to 88⅞	101½ to 106⅞	102 to 108	108½ to 117⅜

According to the above table, New York Central and Manitoba stock fell about the same number of points, though the former was some six months behind the latter in both fall and recovery. Manitoba paid 6½ per cent dividends in 1885, and has yielded 6 per cent every year since then. Mr. Hill's wisdom in securing for the road a productive mileage is shown in its ability to weather this storm, when compared with the Northern Pacific, whose line was long but unproductive.

This, however, was an unfavorable period for extension; and the mileage in the two years, 1884 to 1886, increased from 1,378 to only 1,470.[2] But conditions in the latter year were ripe for the construction of the road westward. 'Three new trunk lines were completed during the year from Chicago to St. Paul, producing competition favorable to the Northwest. Settlers were taking up land beyond the existing road in considerable quantities, and required adequate railway facilities.'[3] Building on the main line west through Dakota commenced in 1886; and at the same time

1. The Chronicle, yearly quotations.

2. Poor's Manual, 1887, p. 836.

3. The Annual Report of the Manitoba for 1886, in the R. R. Gazette, Oct. 1, 1886.

rates on grain, livestock, lumber and coal were reduced 10 per cent to 15 per cent.[1]

Mr. Hill, by establishing in 1887 and 1888 an eastern terminus at Superior as well as in St. Paul, by buying or building large elevators and docks in the former city, by putting a fleet of six steel freight steamers on the Great Lakes,[2] and constructing an elevator at Buffalo, not only made use of that excellent water route for carrying grain east, but improved the strategic position of his road. The Manitoba became independent of the Chicago roads, and could fix through rates to Buffalo on Northwestern products which the others would have to accept or let the traffic go by boat. There was no way to corner or drive to the wall a road with this outlet; and the power to name the rate enabled the Manitoba to give the farmers a low enough one to insure the development of the country and its own prosperity.

Other important changes were taking place at the same time. The mileage reached 2,931 by July, 1889, thus doubling in three years.[3] The western extension had been built to Helena and Butte, Montana,[4] and, with its large local traffic in ore and coal especially, as well as with its quota of through freight,[5] was proving to be of value.[6] Moreover, the company acquired coal mines in Montana which supplied it with a large part of its fuel.[6] The capital stock of the Manitoba was limited by charter to $20,000,000; and most of the funds required for new construction had been obtained by the issue of bonds, a large amount of which were now outstanding. Many of the extensions had been built by separate, proprietary companies, all of whose stock was owned by the Manitoba.[6] But it became apparent that the road was to develop into a great trans-continental railway system with extensive branches and numerous subsidiary companies; and an organization suited to the magnitude of the business with a much larger authorized capital stock was required. To secure this the Great Northern Railway

1. *Ibid.* The farmers farther west would need a lower rate to permit their grain to move.

2. The Annual Report for 1887, in the Gazette, Oct. 21, 1887; also a circular issued by Pres. Hill given in the Gazette, March 9, 1888. This work was done through proprietary companies: the Eastern Minnesota, the Lake Superior and Southwestern Company, and the Northern Steamship Company.

3. Poor's Manual, 1890, p. 569.

4. Part of the line was owned by the proprietary company, the Montana Central.

5. Chiefly grain, livestock and coal.

6. Annual Report for 1889, in the Chronicle, Nov. 16, 1889.

Company was formed in 1889;[1] and the Manitoba leased its lines for 999 years and handed over the stock and bonds of its proprietary railroads to that company. In return it received a guarantee of interest on its bonds and six per cent on its stock. The Great Northern issued $20,000,000 preferred stock only. The entire issue was offered pro rata to the holders of Manitoba at 50. The other $10,000,000 of the par value was met by the transfer to the Great Northern of $22,000,000 of securities[2] subject to a lien of $8,000,000 in bonds. It now assumed general control, and, by its position as operating company for the entire system, the Manitoba and its proprietary companies, assured unity of action and ease of further extension.[3]

The capital stock of the Great Northern has been increased from time to time, chiefly since 1897, until the present amount is $210,000,000. There is but one kind, preferred, the right to issue common stock having been surrendered in 1898.[4] The same year $25,000,000 of Great Northern stock was issued in exchange at the rate of five shares for four, for the $20,000,000[5] of the Manitoba stock; most of the latter was turned in; and the two companies were thus definitely united. In most of the other instances of increase in capitalization of the Great Northern, the new issue has been offered for cash at par to the existing stockholders[6] pro rata of the amount of their holdings.[7] Where bonuses have been paid they have represented new property. The great

1. It was organized under the old charter of the Minneapolis and St. Cloud Railway, which allowed a change of name.

2. Of the proprietary companies as above mentioned.

3. The change also permitted an increase of stock, for the authorized capital of the Great Northern at the time was $40,000,000. Hence bonds would not, as with the Manitoba, have to be relied upon entirely for funds for extension. Changes in corporate form have often been the source of fortunes for the promoters; but nothing of the sort is apparent here.

4. Poor's Manual, 1899.

5. Annual Report, Great Northern, 1899.

6. Except $1,000,000 which was opened to subscriptions of employees of the road under certain conditions. Of the issue of 1898, $10,000,000 could be paid in that amount of certificates issued previously to stockholders and representing a branch road which the Great Northern had built.

7. Annual Reports, 1893, 1899, 1900 and 1901. There was an increase from $125,000,000 to $150,000,000 for stockholders of record, Nov. 8, 1905, and a further issue of $60,000,000 in January, 1907.

majority of the stock thus represents cash paid in;[1] if not, property at cost value or less; and it has always been divided proportionately among existing holders. There is an absence of two kinds of stock, or extensive watering of the capital. Nor is there any appearance of there being any specially favored companies working in connection with the Great Northern such as have accounted in some instances for the accumulation of great wealth. The stockholders get the full benefit of the great earning capacity of the road. The subsidiary companies all pay their surplus into a common treasury, whence they go as dividends on "Great Northern."[2]

That stock paid 3¼ per cent in 1891; 5 per cent, 1892-1897; 6¼ per cent in 1898; and 7 per cent since then. It has made Mr. Hill rich. As in the case of the Manitoba, he has directed the policy of the road. But what has this direction contributed to its prosperity? In investigating the matter, we shall first complete briefly, for much of it is well known, the traffic story of the road, which involves some of the most interesting and important chapters in the history of the Northwest. Then, with these concrete illustrations before us, we can discuss in a general way the salient features of Mr. Hill's railroad management and their significance.

§ 7. The Great Northern was the first trans-continental line to be built without a land grant or any bonus.[3] Others had regarded the assistance of the Government as necessary to success in like undertakings; and it is known what a generous subsidy

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1. In the following cases only have stock or bond bonuses been discovered (*sed vide* p. 40):

1879	$11,200,000 original stock of the Manitoba distributed, less $1,000,000 in the pool	$10,200,000
1883	The $10,000,000 bond issue, less 10% paid	9,000,000
1889	$20,000,000 original Great Northern stock less 50% cash payment	10,000,000
1898	Certificates used for subscription to stock	10,000,000
1898	$25,000,000 Great Northern stock, offered in exchange for $20,000,000 Manitoba	5,000,000
1908	Total	$44,200,000

The receipts from the stock sales have been used to buy or build extensions or retire bonds. Thus, the policy of using stocks largely, as well as bonds, to secure funds, has been followed. Increased earning power is reflected more in the high price of these securities than in the issue of scrip dividends.

2. W. B. Dean, St. Paul, a director of the Great Northern.

3. The land given the St. Paul and Pacific by the State of Minnesota served a purely local purpose. The Great Northern even paid for its right of way through public lands.

many of them received. But Mr. Hill was original, and realized thoroughly that a large tonnage is the essential matter for a railroad. With this, any line can stand on its own feet. So during the years 1890 to 1893 the Great Northern was built across to the Pacific[1] with the lumber traffic as the justification of the move.[2] Hitherto the lumber supply of the North Central and Northwestern states had come chiefly from the forests of Michigan, Wisconsin and Minnesota. But these were being rapidly exexhausted, while population and demand for lumber were increasing. The source of supply for the future lay in the extensive forests, as yet intact, of the State of Washington, "the largest bodies of pine and other valuable timber left standing in the country."[3] An enormous traffic was here offered,—to carry these forests to the people of the Mississippi Valley for the construction of houses and barns. It is likely that the existence of this possibility was realized by others; but ability of no inconsiderable order was required to meet the difficulties present. To carry a commodity like lumber, of such low value in proportion to its weight, 2,000 miles or more, would necessitate a rate per ton-mile that would be low for any part of the country, and out of the question in the West, where fuel was scarce and haulage across the mountains with their steep grades was expensive. Mr. Hill made the necessary rate. It had been 90 cents per cwt.; but this was prohibitive. He called the lumbermen of the Pacific coast together, and asked what rate they would require to put their product into the markets of the East in competition with that of Michigan and Minnesota. They replied, 65 cents per cwt., which he said was still too high, and made the rate 40 cents.[2] What made such a rate possible as a paying proposition? It was the efficiency of the Great Northern as a common carrier. $800,000 had been spent in a most thorough survey of the Rocky Mountains; and the best possible location of the line, with a maximum gradient of but 1 per cent, was thus secured,[2] so that an engine could pull a much heavier load than on other lines. Then, too, this was back-haul traffic; and it cost but little more to carry timber in the cars than to haul them empty. In this way Mr. Hill did what

1. Annual Reports of the Great Northern, 1890-1893.

2. Mr. Hill's testimony in the "Merger case,"—U. S. v. Northern Securities Co., Defendants' Testimony, Transcript, vol. 3, pp. 663 ff. This is an authority for much that follows in the same connection.

3. Annual Report, 1893.

had not been done before;[1] the Northern Pacific, completed to the coast in 1883, does not appear to have been able to handle the lumber; new traffic was created by the Great Northern.

During the crisis of 1893, when many roads, including the Northern Pacific, passed into receiver's hands, the Great Northern paid its regular 5 per cent dividends,[2] thus displaying a remarkably firmly founded earning capacity for a new road which had just completed a long extension. The Annual Reports indicate that recovery from the shock took place most rapidly in the West, and that that part of the line contributed more than its share to sustain earnings, an immediate vindication of Mr. Hill's policy in building to the Pacific.

New lines have been constructed till the mileage in 1908 was 6,716.[3] Most of these have been branches in the farming districts of Minnesota and Dakota, or in the mining and timber regions of the far West. A short-line across Northern Minnesota from Dakota to Superior, laid in 1898, permitted a reduction in rates on wheat from the former district moving east.[4]

Recently the Oriental trade has assumed a position of importance; and we give the main facts of its relation to the Great Northern in the following quotation from the Annual Report for 1900:

"The growth of lumber and timber business from west of the Rocky Mountains begins to call for more cars than are loaded west-bound. (The company could not afford to haul empty cars west for a traffic paying such low rates as lumber, and so was obliged to find means to increase west-bound freight. The export traffic served this purpose and was to be encouraged.) Oriental trade has already reached a point where the traffic is practically limited to the ships which can be secured to carry the commodities seeking

1. A forecast of the situation is given in the Annual Report for 1890. "When this extension (to the coast) has been completed, your Company will have a continuous rail line, from Lake Superior, St. Paul and Minneapolis, to the Pacific Coast, shorter than any existing transcontinental railway, and with lower grades and less curvature. Its cost and capitalization will also be much less than those of any other line to the coast. It is expected that, with the foregoing favorable conditions, the heavier products of the Pacific Coast region, which up to this time could seek markets only by ocean routes, can be moved eastward to the older sections of the country."

2. Poor's Manual, 1898. The only other long line in the country to maintain dividends 1893-7 was the Lake Shore, while the Great Northern increased its dividends to 6% in 1897.

3. Annual Report, 1908.

4. Annual Report, 1899.

an outlet to China and Japan. To meet these conditions and to provide ample tonnage for this trade the Company has organized the Great Northern S. S. Company, which has now under construction two steamers of the largest class with all the modern appliances for safety and economy."

This trade has grown considerably and forms a large item in future prospects.

The joint purchase of the Burlington in 1901 by the Great Northern and the Northern Pacific was important to Mr. Hill's road in several ways. Its chief value, perhaps, was in furnishing an outlet to Chicago and to the large lumber-consuming and stock-feeding districts of Iowa and the adjoining states, for the timber, livestock and other products of the Northwest and the Pacific Coast. On the other hand it tapped regions of supply of iron and steel and farm implements for the Orient and the West, and of cotton for Japan.[1] Control of the Burlington enabled a through rate on all these commodities to be made and maintained without dependence on another road, and in this way made possible the creation of a large traffic.[2]

The Great Northern in connection with buying up certain ore roads, also purchased iron ore mines in Northern Minnesota; but these, together with its coal mines, elevators, etc., have been consolidated separately as the Lake Superior Company. This company did not report in connection with the road proper; but its properties were held for the benefit of Great Northern stockholders.[3] More recently the company has issued certificates to the owners of Great Northern shares, on which the large profits from the mines are paid.

§ 8. Mr. Hill's general policy and its relation to the prosperity of his roads—the matter before us now—is indicated by what we

1. Annual Report, 1901.

2. Mr. Hill described the importance of this independence of action: "We found that it was necessary for us in order to be on a permanent basis, to have more than a joint rate, to have more than a joint tariff, which might be withdrawn at any time. We could not build up a great permanent business, extending across the continent and even across the ocean, on the basis that tomorrow the rate might be changed, or the party with whom we were working to reach the different points of production or consumption had some other interest or some greater interest elsewhere." 'A profitable market had to be provided the cattlemen and lumber men along the line of his road to cause them to continue to produce.' U. S. v. Northern Securities Co., Defendants' Testimony, vol. 3, pp. 670-1.

3. Annual Report, 1900, p. 29.

have already seen. We shall discuss first, the construction of new lines, then, the operation of the road, rates, traffic and earnings, and finally, certain other matters of policy which play their part in increasing earnings. In this connection, tables are given of the mileage, rate per ton-mile, density of traffic, train-load and

GREAT NORTHERN.

Year	Mileage	Rate per Ton-mile, Cents	Density of Traffic, Tons	Train-load, Tons	Net Earnings, including Taxes	Net Earnings per Mile
1880	656	.....	.....	.....	$1,584,817	$2,416
1881	702	2.88	132,870	85.4	1,906,756	2,785
1882	926	2.51	205,000	117.3	3,308,917	3,573
1883	1,203	1.95	283,000	145.1	4,689,779	3,995
1884	1,378	1.79	247,000	190.9	4,449,251	3,229
1885	1,459	1.52	271,000	213.5	4,460,445	3,057
1886	1,471	1.44	255,000	240.	3,663,333	2,491
1887	1,739	1.36	259,000	226.7	3,929,038	2,259
1888	2,304	1.30	243,000	204.5	4,405,840	1,912
1889	2,932	1.49	139,000	152.7	3,835,090	1,308
1890	2,784	1.28	194,000	185.3	4,857,225	1,745
1891	2,796	1.24	220,000	197.	5,117,760	1,830
1892	2,865	1.23	275,000	202.3	5,470,830	1,909
1893	3,352	1.23	255,000	235.2	6,187,164	1,846
1894	3,765	1.10	212,000	227.	4,856,578	1,290
1895	4,374	.984	307,000	252.1	7,343,509	1,679
1896	4,374	.976	371,000	256.	9,381,856	2,145
1897	4,415	.956	375,400	281.1	8,734,189	1,978
1898	4,466	.932	434,000	316.29	11,722,839	2,625
1899	4,786	.916	451,000	336.17	12,853,902	2,686
1900	5,076	.899	493,500	356.78	14,033,211	2,765
1901	5,202	.871	477,000	381.29	12,507,269	2,404
1902	5,249	.859	608,000	417.59	18,243,092	3,475
1903	5,490	.857	657,000	446.78	20,708,818	3,772
1904	5,623	.893	596,000	447.40	19,462,990	3,461
1905	5,723	.792	728,700	522.57	22,084,161	3,859

The figures were taken from Poor's Manual. Certain subsidiary lines were not included in 1890-1894. This accounts partly for the figures of those years.

The computation of (*a*) density of traffic and (*b*) train-load is not made in the Manual, and they were obtained (*a*) by dividing the total ton-mileage by the miles of road, and (*b*) by dividing the ton-mileage by the train-mileage.

NORTHERN PACIFIC.

Year	Mileage	Rate per Ton-mile, Cents	Density of Traffic, Tons	Train-load, Tons	Net Earnings	Net Earnings per Mile of Road
1880	722	1.96	112,000	88.	$840,946	$1,165
1881	754	2.29	128,000	.....	1,121,679	1,488
1882	797	2.02	242,500	.....	1,857,465	2,331
1883	1,497	2.22	162,700	98.8	2,761,293	1,682
1884	2,318	1.96	173,000	125.8	5,425,821	2,341
1885	2,496	1.78	157,000	137.8	5,037,849	2,019
1886	2,718	1.67	177,000	149.1	5,574,263	2,051
1887	2,875	1.63	187,000	121.6	5,616,428	1,953
1888	3,219	1.45	219,000	129.8	6,579,443	2,044
1889	3,439	1.43	254,000	121.4	7,521,523	2,144
1890	3,584	1.4	305,500	130.2	9,146,757	2,636
1891	4,222	1.38	298,000	145.2	9,750,547	2,309
1892	4,412	1.4	278,600	147.9	10,084,108	2,286
1893	4,443	1.23	308,000	153.1	8,985,997	2,023
1894	4,468	1.11	230,000	145.	4,265,264	963
1895	4,469	1.11	264,000	163.7	5,613,582	1,256
1896	4,404	1.13	299,000	187.5	7,354,979	1,670
1897 10 mo.	4,375	1.14	220,000	182.6	5,356,965	1,224
1898	4,362	1.06	371,000	264.6	11,089,838	2,542
1899	4,579	1.05	400,000	277.6	13,699,222	2,992
1900	4,714	.99	468,000	317.7	15,626,689	3,315
1901	5,100	.94	478,600	324.4	15,920,840	3,122
1902	5,019	.9	657,000	346.73	20,098,966	4,004
1903	5,112	.91	707,000	325.73	22,110,012	4,325
1904	5,262	.88	700,000	339.04	22,290,032	4,236
1905	5,315	.832	820,000	366.52	23,914,127	4,499

The figures were taken from Poor's Manual.

Mr. Hill was supposed to be in control of the management for the years 1902-5, which perhaps partly accounts for some of the figures.

net earnings of the Manitoba and Great Northern and of the Northern Pacific from 1880 to 1905, or from the organization of the Manitoba till after Hill control of the Northern Pacific was apparently well established. Since 1893 they have both been lines running from St. Paul and Duluth through the border states of the Northwest to the Pacific Coast; and, although the Northern Pacific was completed to Portland in 1883, ten years before the

Great Northern, yet both served northwestern Minnesota, and from 1887 on, the Great Northern was pushing its line west. They were both engaged in opening up new country. These similar conditions render the comparison of the two lines of significance as an indication of the value of Hill management in regard to some of the features now to be discussed.

The construction of new lines has been at a minimum cost, and, together with the use of earnings for improvements, has resulted in a low capitalization. For instance, in 1905, the total capitalization of the Great Northern with 5,723 miles of road, was but $225,479,064 as compared with $448,087,500, the capitalization of the Northern Pacific, whose mileage was 5,315. The capitalization per mile of line was respectively $39,400 and $84,300. The extensions made have also fully justified their construction by the new traffic contributed; but no risk was ever run in the matter of extension, since no new line was built until the existing road could support it.[1] This sure policy has had its effect; Great Northern dividends have never failed or been reduced, but have shown a remarkable regularity and a rise at intervals. Such elimination of risk is an important factor in the acquisition of a fortune. It prevents relapses and the liquidation of one's holdings at panic prices. The instances of sudden losses of wealth from this cause are only too numerous.

We saw how, at the very beginning, the Manitoba used earnings freely for improvements[2] with future saving in view and how low grades across the Rockies were similarly obtained.[3] An examination of the annual reports to date shows that this has been the regular policy.[4] A result of this policy, to a great extent, is the constantly increasing train-load of the Great Northern, a strong point with Mr. Hill. Here the contrast with the Northern Pacific is most marked; and the economy in the running of the Great Northern is seen. Cost of haulage is reduced to a minimum.

1. Statement by Mr. Hill.
2. Page 29.
3. Page 38.
4. The Report for 1896 says: "The policy of keeping the railways and their equipment in the highest state of efficiency has been observed, as heretofore." And again, "In capital accounts appear only such expenditures as were incurred for positive additions to property; all outlays for every kind of replacement having been charged to operating expenses."

In 1898: "Out of the net revenue for the year, $750,000 were appropriated toward cost of the tunnel now being built through the Cascade Mountains."

This condition has been taken advantage of to reduce rates. The Great Northern certainly has led the Northern Pacific in this regard. This state of affairs is the more noteworthy between 1883 and 1893, because the Northern Pacific had at that time a line to the coast and the accompanying opportunity for a long haul and a low rate. The reports state that, "it is the policy of the Company to reduce freight rates as rapidly as the volume of traffic and earnings will justify."[1] Low rates have played their part in increasing the freight and earnings of the road: the proper rate secured the lumber traffic; and "the Company's policy of making low rates to its western territory has enabled settlers to avail themselves of the cheap lands of the West."[2]

Many other economies and matters of policy have contributed to earnings of which we can only mention some of the most important. There has been an interesting development of independence from outside companies where this has been possible. In 1895 the Great Northern began to carry its own insurance, and in three years had saved $71,255.81.[3] Again, when the contract with the American Express Company expired in 1892, the Great Northern organized its own express company, which paid the railway the same transportation rates as the American Express, and in addition turned in $60,000 net earnings the first year.[4]

The accounting system originated and used by it is recognized to be, probably, the best in the country. A very high order of efficiency is secured.

The reports indicate the policy of buying extensive terminal facilities early and thus saving considerable expense later. Mr. Hill bought the land for the Minnesota Transfer, some five miles from the center of St. Paul, where the different lines now exchange freight. He held it a year before he could induce the other roads to come in with him. It was regarded by many as much too far out of the city; but time has proved the value of the location.[5] In Duluth, land for terminals was purchased at a few dollars an acre, years before the road entered the city; and facilities in Seattle

1. Annual Report for 1902. In the Report of the Manitoba for 1887, "The uniform policy of this Company has been to meet, and even to anticipate, the wishes of its patrons for reduced rates, by lowering its tariffs as rapidly as compatible with the retention of means for improving the property up to, and its maintenance at, a high standard of efficiency."
2. Annual Report, 1901.
3. Annual Report, 1898.
4. Annual Report, 1893.
5. St. Paul Pioneer Press, Jan. 17, 1906.

were also acquired cheaply. In these two cases alone, very large sums were saved by early investment.

Before leaving this phase of the subject we must notice one matter in which Mr. Hill is a "specialist,"—encouragement of good farming along his lines. After all, the earning capacity of a road depends upon the prosperity of the country through which it runs. First, it is necessary to have desirable settlers in sufficient numbers; and the Great Northern has been fortunate in this regard, as large numbers of hardworking Scandinavian immigrants have taken up land in northern Minnesota and Dakota, in addition to those coming from other parts of this country. The road's lands have been sold at $5 an acre to prevent their falling into the hands of speculators; but a rebate of $2.50 an acre has been granted to those actually farming, after five years of cultivation. Secondly, Mr. Hill, through frequent speeches to the farmers in various sections, encouraging rotationof crops, the raising of live stock, the use of fertilizers and irrigation, has given them the best of advice how to improve their condition and increase the value of their land and its product; and freight rates are lowered to correspond. He has also purchased and raised a large number of blooded stock, 5,000 boars and 800 or 900 bulls, at his farm near St. Paul, and has distributed them along the railway to improve the quality of livestock in those sections.[1] These are some of the ways in which Great Northern earnings have been increased.

1. What Mr. Hill has done along the line of farm improvement is discussed in an article by Mrs. M. H. Severance, *James J. Hill, a Builder of the Northwest*, Review of Reviews, June, 1900.

CHAPTER III.

John D. Rockefeller

§ 1. A discussion of the causes of large fortunes would scarcely be complete unless it included Mr. Rockefeller. But so much has been published about how he has acquired his fortune in so far as the means he has employed are at all known, that any lengthy description of the facts involved would be merely transcription of widely read articles. What is of more service is an examination in the light of the sources of certain fundamental matters of fact on which previous writers have more or less differed, and an analysis of some of the more important causes producing the fortune.

§ 2. In regard to Mr. Rockefeller's early life we get a good deal from Miss Tarbell. He was quiet, hardworking and thrifty. He learned early to save and invest and to drive a good bargain. At sixteen he was obliged to go to work, and secured a clerkship in a warehouse on the Cleveland docks. It was not a prosperous period. He earned twenty-five to fifty dollars a month and saved eight hundred dollars in two years. Following a dispute over salary, he left the clerkship and invested his $800, along with $3,200 borrowed from his father, with one Clark in the produce commission business on the docks. Together they handled a large trade, especially during the Civil War. The profits for the first year were $4,400. He stayed in this business from 1857 to 1865.

Beginning with 1862, Mr. Rockefeller commenced to advance money to an acquaintance, Andrews, who had entered oil refining, then a wonderfully promising young industry. The first oil well, indeed, had been put down only three years before. In 1865 he withdrew from the commission business entirely and invested his capital in the refinery of Rockefeller and Andrews.

Mr. Rockefeller was thus established in the oil business at twenty-six years of age. Many other men were in the same business at the same time, were as favorably located, and had as good plants as Mr. Rockefeller. It will be interesting to see what he has done to build up a monopoly of the business while these independent firms have disappeared.

§ 3. The first step was to enlarge the size of the plant. William Rockefeller, S. V. Harkness and Mr. Flagler were added to the firm in 1867; and it was reorganized as Rockefeller, Andrews and Flagler.[1] The capital was increased say from $100,000 to $500,000.[2] The new plant not only had a larger output of oil but also manufactured its own barrels. The generally accepted saving on this item alone is a cent and a half a gallon, the price of barrels being four cents per gallon of capacity, the cost, two and a half cents. Moreover, since he was a large shipper, Mr. Rockefeller in 1868 received a rebate on his oil from the New York Central.[3] Thus a larger outlay of capital in the business at this time was doubly remunerative: first, it increased the capacity of the plant, and since the demand for oil was in excess of supply at good prices, any addition to capacity of output brought a corresponding increase in profits; secondly, it permitted the securing of certain economic advantages which were possible only with the larger plant, the saving on the manufacture of barrels and the rebate. Mr. Rockefeller now had one of the best plants in the country.

It may be said that the rebate in freight rates is not properly to be included among the economic advantages of large-scale production. Socially speaking, this is probably correct. But the consensus of opinion is that rebates were very generally paid at this time, and were to be counted upon by the individual concern much as trade discounts are allowed to the large buyer. The economic circumstances of the time resulted in rebates being paid.

The nature of these circumstances comes out very clearly in the next important move which Mr. Rockefeller made. By 1872 there was considerable competition in refining.[4] Many new stills had been set up; and the combined capacity was greater than the consumption required. At the same time the railroads, the Pennsylvania, the Erie and the New York Central, had lowered rates by their competitive underbidding to an unprofitable level. Gould with his reckless raids for traffic had complicated the situation;

1. *Report of the Industrial Commission*, 1900, vol. i, p. 794.

2. G. H. Montague, *Rise and Progress of the Standard Oil Company*, 1903, p. 6. The capacity of the firm at this time was 600 barrels of refined a day. *Investigation of Trusts*, Congress, 1888, p. 288.

3. Affidavit of J. H. Devereux, vice-president of the Lake Shore. Ida M. Tarbell, *History of the Standard Oil Company*, 1904, appendix 3.

4. Information furnished by Mr. Dodd, solicitor for the Standard Oil Company. *Report of the Industrial Commission*, 1900, vol. i, p. 799.

and there seemed to be no way for the roads to act together and secure better rates. Unrestricted competition was bringing loss to both the oil trade and the railroads. Some form of united action was needed. The railroads failed to find it; and a group of refiners seized upon the opportunity. They combined to relieve the situation, to establish harmony; and in doing so substantially forwarded their own interests. They first organized the South Improvement Company,[1] Mr. Rockefeller and his associates owning almost half of the stock. This company represented one-tenth of the refining capacity of the country;[2] and it agreed with the railways to ship oil over the different routes to the seaboard in such amounts that each road would secure a fixed per cent of the total traffic. Having insured to it a certain amount of oil freight and no more, there would remain no reason for any road to reduce its rate. In return for this service of "evening" the traffic the railways promised the members of the South Improvement Company a rebate of from twenty to fifty per cent on its oil shipments and a like drawback on the shipments of others.[3] This service was worth much to the roads. It enabled them to more than double their rates in some cases. In fact the new tariff with the rebates above mentioned subtracted was as high as the old one;[4] that is, the rebate really amounted to an increase of the old rates to all others except the favored shippers. Such is the value of harmony among competing railroads.

With the contracts for these rebates in hand, Mr. Rockefeller and his partners went to the owners of the various Cleveland refineries and induced most of them to sell out. It would be impossible for them to live in competition with those who had the advantage of a dollar a barrel in freight charges. Where the costs

1. True it is said that the idea of this company originated with the railway men; but they played a minor role in working out the idea, and held only a small per cent of the company's stock. Certainly the railroads failed to form a pool or reach any such agreement to regulate traffic.

2. Ida M. Tarbell, *History of the Standard Oil Company*, 1904, vol. i, pp. 58-59.

3. The contract is given in the *Report of the Industrial Commission*, 1900, vol. i, pp. 610 ff.

4.

		New Tariff	
	Old Rate	Rebate Subtracted	Regular Rate
Oil City to Cleveland.....	35c	40c	80c
Warren, Pa., to New York.....	87c	$1.50	$2.56

Ida M. Tarbell, *History of the Standard Oil Company*, 1904, vol. i, p. 71, and appendix 5.

of competitors are equal in most particulars, and where they have reduced to a very small margin the difference between cost and price, as was the case in refining at this time, then a lessening in some one item of expense to certain competitors means all the difference between profit and loss, between survival and failure. So, in the present case, the general rise in freight rates to all outside the South Improvement Company meant the wiping out of their profits; and when the Cleveland refiners saw the contracts, practically all of them sold out to Mr. Rockefeller for cash or for stock in the Standard Oil Company of Ohio.[1] This company was incorporated in 1870 with $1,000,000 capital stock as the successor of Rockefeller, Andrews and Company; and in 1872 it increased its stock to $2,500,000 to supply the cash and securities for the expansion just mentioned. The Standard Oil Company, then, by this single stroke became much the largest refiner of oil in the United States. Its output was increased from 1,500 barrels a day, or less than 4 per cent of the total product of the country, to 10,000 barrels, or over 20 per cent of the total.[2] In combination with others its owners secured rebates from the railways and used their monopoly position to force others to sell to them.

The Cleveland refiners, however, were too hasty in disposing of their property, because the rebates in rates never took effect. The other rivals of the South Improvement Company, especially the refiners located in the oil fields and the owners of the wells, fought the company bitterly, knowing as they did that with such concessions it was bound to become a monopoly. This combined hostility brought the railroads to time; and they rescinded the rebate contracts. They defended their action in entering into the

1. Considerable testimony bears out the fact of this rather important transaction:

(*a*) Testimony of Mr. Alexander and Mr. Doane, the former a Cleveland refiner, before a Committee of the House of Representatives, 1872. Quoted by Miss Tarbell at pages 64 and 65, vol. i.

(*b*) Testimony of Frank Rockefeller before Congress, 1876. Tarbell, *ibid.*

(*c*) Affidavit of George O. Baslington of the firm of Hanna, Baslington and Company, Cleveland, to the effect that they sold to the Standard Oil Company in February, 1872, a refinery, which had cost $76,000 and whose earnings made it worth $100,000, for $45,000 cash, because they discovered that the Standard had already bought up most of the Cleveland refineries and had secured very favorable rates. Ida M. Tarbell, *History of the Standard Oil Company*, 1904, appendix 7.

2. *Investigation of Trusts*, Congress, 1888, p. 288, and Ida M. Tarbell, *ibid.*, vol. i, pp. 67 and 68.

obnoxious contracts on the ground of a misunderstanding with regard to the nature of the South Improvement Company, having supposed that it represented a great majority of both refiners and well-owners. Now, that it became apparent that only a small per cent of the shippers were to benefit, they were ready to annul the agreement. Further, the Pennsylvania legislature repealed the charter of the South Improvement Company.

The check given to combination by the dissolution of the South Improvement Company was only temporary. Very shortly after the repeal of the rebate contracts, the Standard Oil Company and other refiners representing four-fifths of the capacity of the country formed an association[1] and succeeded in raising the price of oil considerably.[2] But the agreement was in the nature of a pool, and suffered the usual fate of those voluntary associations: members failed to live up to their promises; misunderstandings arose; and in 1873 the pool broke up.

This form of combined action failing, Mr. Rockefeller returned to the plan of purchase. He bought up three of the largest refineries in the country, those of Charles Pratt and Company, New York, Warden, Frew and Company, Philadelphia, and Lockhart, Frew and Company, Pittsburg, the last two being purchased secretly.[3] The stock of the Standard Oil Company was increased $1,000,000 to effect the purchase. Since it was secret, the refineries continued to be operated under the old names. The union was beneficial to the parties concerned in several ways. In the first place there was the ever present advantage of rebates to the large shipper. The railways had finally got together, and in 1874 established a blanket rate for all refineries from the well to the Atlantic; that is, the sum of the rate on crude to the refinery and the rate on refined to New York or Philadelphia was the same for every refiner regardless of distance.[4] This, of course, put the

1. Ida M. Tarbell, *History of the Standard Oil Company*, 1904, vol. i, p. 109.

2. Chart of the Prices of Crude and Refined Oil, *Report of the Industrial Commission*, 1900, vol. i, Part 1, opp. p. 52.

3. Ida M. Tarbell, *ibid.*, vol. i, pp. 146-8. The statement there is based on information secured directly from Mr. Lockhart, and on Mr. Flagler's testimony in the *Investigation of Trusts*, Congress, 1888, p. 770.

4. The "Rutter Circular," *Report of the Industrial Commission*, 1900, vol. i, p. 641.

The circular also provided that a rebate of 22 cents per barrel be paid to those pipe-lines which maintained agreed rates of pipeage. Mr. Rice, *ibid.*, p. 695, and Miss Tarbell, vol. i, p. 143, state that this rebate went only

Standard Oil Company in Cleveland on an equality with the plants of Pittsburg and New York, as far as an advantage of location was concerned, although oil brought to Cleveland was subject to the extra haul of a hundred miles or more west from the wells of Pennsylvania and back again. Certainly the Standard Oil Company in this pooling agreement of the railroads received recognition of its position as a large shipper. But, when it further increased its strength by uniting with the three firms mentioned above, it secured in addition a ten per cent reduction on the pool rate.[1]

Moreover, this combination was the working basis for securing a practically complete monopoly of the business of refining. The Central Association for refiners was organized in 1875 in which Mr. Rockefeller and his associates played the chief part. A refiner could lease his plant to this association and himself still retain control of the process of refining. The association, however, was to fix the price paid for crude and at which refined could be sold, and was to control freight rates.[2] Independent refiners now joined this association or sold out to one of the concerns secretly owned by the Standard. The Acme Oil Company and the Standard Oil Company of Pittsburg, also controlled by Mr. Rockefeller and his associates, purchased other plants and hastened the process of consolidation. In these ways, by 1876 such a monopoly of the refining business had been secured that in the autumn of that year the price of oil was raised temporarily 100 per cent.[3] Several considerations had induced men to sell to the members of the association or to join it. In the first place, prices were low and men were ready to sell; in the second place, the members of the association secured rebates and were surer of being able to secure cars—the association's position as the large and favored shipper had by this time, through growth, become unassailable—; in the third place, the control of these new companies by the Cleveland men was secret; and an independent in Pittsburg would sell out

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to the pipe-lines in a pool connected more or less with the Standard Oil Company; but just why other pipe-lines could not maintain the agreed rates and so secure the 22 cents is not clear.

1. Ida M. Tarbell, *History of the Standard Oil Company*, 1904, vol. i, p. 151, based on testimony of Mr. Blanchard, General Freight Agent of the Erie, *ibid.*, appendix 26.

2. Ida M. Tarbell, *ibid.*, vol. i, pp. 148-9.

3. *Vide supra*, p. 50, note 2.

to his neighbor, Mr. Lockhart, when he would absolutely refuse to let Mr. Rockefeller have his plant.[1]

The new organization was soon to have its strength tested. Following the opening of the Bradford oil fields in 1876 and the increased output of crude oil, together with the arbitrary advancement of the price of refined in that year, new independent refineries sprang up. Moreover, the Empire Transportation Company, the pipe-line feeder of the Pennsylvania Railway, began its famous fight against the Standard Oil Company now that the latter's monopoly had become apparent. The pipe-line company was supported by the railroad in the fierce price-cutting contest which followed; but the Standard Oil, with its excellent organization and large surplus and the assistance of the New York Central and Erie roads, was found to have the greater endurance, and forced the Empire Transportation Company to sell. It was a contest in which capital was important; the Standard had the greater resources and was the victor. With the victory went a monopoly of the pipe-lines. In addition, the railways had learned their lesson. None of them was likely again actively to oppose the oil company. They consented to an agreement by which the Standard and allied concerns were to receive a 10 per cent rebate or commission[2] for guaranteeing to the different roads fixed percentages of the total traffic. Later there was added to the 10 per cent rebate a drawback of 22½ cents per barrel on all crude oil transported, an arrangement similar to the one of 1872.[3] This contest left the Standard Oil Company in a very strong position. In addition to the ownership of practically all the refineries, it controlled the pipe-lines and could make it difficult for formidable rivals to secure

1. Ida M. Tarbell, *ibid.*, vol. i, pp. 154-161.

2. Ida M. Tarbell, *History of the Standard Oil Company*, 1904, appendices 27 and 28; and *Investigation of Trusts*, Congress, 1888, pp. 774-5.

3. Ida M. Tarbell, *ibid.*, appendices 29 and 30; and *Report of the Industrial Commission*, 1900, vol. i, pp. 386-7.

There is some doubt as to whether this 22½ cents was a rebate. It was allowed to the American Transfer Company, a pipe-line associated with the Standard. Mr. Flagler, of the Standard Oil Company (citation *supra*, appendix 30), testified before the Congressional Committee in 1888, that the allowance was made to the pipe-line by the roads for its service in collecting oil; that while it may have levied in addition a nominal charge on the shipper of oil, yet it depended really on this 22½ cents for its gross receipts. Mr. Archbold, of the Standard Oil Company, simply stated before the Industrial Commission in 1900 (p. 515) that the 22½ cents was the pipe-line's share of a through rate; and Mr. Montague adopts this view (p. 59 of the *Rise and Progress of the Standard Oil Company*). Contra, however,

crude oil. The railways had learned from their own weakness its strength and were bound to support it, to give it rebates and drawbacks and to make whatever rates might be necessary to meet competitors which should appear.

By 1879 the Standard had built up a more complete monopoly than it has to-day. It then controlled 90 to 95 per cent of the oil-refining business as compared with 5 per cent in 1872.[1] What were the causes which brought this about?

§ 4. It is said that the monopoly was almost entirely the result of rebates. We have seen that they certainly were one element in its growth. Just how important an element, is perhaps best shown by the accompanying table giving the chief rebates of which there is evidence to show that they were paid to the Standard Oil men during this period up to 1879. The first column gives the date of the rebate and the person or corporation to whom paid; the second gives the amount of the rebate and the service rendered in exchange; the third column, the advantage accruing to the recipient thereby; the fourth, evidence as to rebates received by others at the time. This table is no doubt incomplete in many features; for instance, there were very probably other rebates paid of which we know nothing; and there were in 1877 and 1878, and doubtless before, terminal and lighterage charges allowed to the Standard, of the fairness of which one cannot well judge without familiarity with the usual charges. Yet there are some conclusions which the evidence given seems to justify. Mr. Rockefeller's refining interests received rebates almost continuously during the period up to 1879. Most of the time these rebates were competitive in nature, others receiving them also, though not so systematically as the Standard, the largest shipper. But in two cases, in

there are two important considerations: First, the letter in which Mr. O'Day asks for the allowance (citation *supra*, appendix 29) offers as the *quid pro quo* co-operation "in every effort to secure for the railroads paying rates of freight on the oil they carry" rather than the service of carrying oil, and in other ways indicates that something other than a pipe-line per cent of a through rate was being sought. Second, the 22½ cents were paid on all oil shipped, whether handled by the American Transfer Company or not. Certainly allowance on other oil not transported by them was a drawback and not a pipe-line's per cent of a through rate. Citations *supra*, appendix 29, and *Report of the Industrial Commission*, 1900, vol. i, pp. 386-7.

1. Testimony of Mr. Rogers before the Hepburn Commission in 1879. cited in the *Report of the Industrial Commission*, 1900, vol. i, pp. 646-7, note,

The per cent of refined produced by the Standard in 1894-8 ran from 81.4% to 83.7%; Mr. Archbold, *ibid.*, p. 560.

1872 and in 1877-9, the rebates went to one association alone, the one to which Mr. Rockefeller belonged, and proved of great advantage to it in destroying competition.'

It was natural that Mr. Rockefeller should receive rebates. His refineries at Cleveland were located where they had a choice of the Erie or New York Central Railways, or the Lake and the Erie Canal, as a means of transportation to the seaboard. The competition of these carriers to secure traffic from each other would lead to rebates such as the ten per cent granted by the Erie in 1875; their desire to build up the refining interest at Cleveland, a point which they served, as against Pittsburg or the well-regions, territory of the Pennsylvania road, would induce them to meet the latter's rates, as in 1868 and 1872. Moreover, the growth of the Standard and the fact that most of the time it was the largest shipper of oil, would increase its value as "evener" of traffic and force any road to grant it favorable rates if it desired to retain its traffic, so that finally, in 1877, with the Empire Transportation Company sold out, it 'alone could keep peace among the roads' and secure the advantageous rebates of that and the following years.

The primary cause of combination and monopoly in the oil business, however, was not rebates, though they may have hastened by several years its realization. It was, as we shall see in the next section, rather the very general desire to eliminate unrestricted competition and its losses, combined with Mr. Rockefeller's success in finding a way to bring about this result.

REBATES RECEIVED BY MR. ROCKEFELLER AND ASSOCIATES—1868-79.[1]

Date	Recipient	Amount and Service Rendered	Advantage to Recipient	Were others receiving like rebates Yes. No.
1868ff.	To Rockefeller, Andrews & Co., Cleveland. From N. Y. Central.	To "handle oil as cheaply as the Pennsylvania Ry." Remained at Cleveland and pushed refining there.	Better rates than other Cleveland refiners, at a time when prices were falling.	Pennsylvania Ry. was giving low rates, not necessarily rebates, to refiners of western Pennsylvania.
1872	To members of the South Improvement Co. From N. Y. C., Erie, and Pennsylvania.	20% to 50%, both rebates and drawbacks. (Contract rescinded before it took effect). For service as evener.	Used to force the great majority of Cleveland refiners to sell out to the Standard Oil at reduced valuations.	South Improvement Co. alone to receive the concessions, which were most unreasonable in amount.
1872ff.	A week after rescission of Southern Improvement Co.'s contracts. To Standard Oil Co. and probably later to members of the refiners' pool.2	$0.25 on the $1.50 rate on refined, Cleveland to New York. Large shipper.	Nullified gains secured by competitors in Pennsylvania through victory over the South Improvement Co.	Rebates allowed by Pa. to the Empire Transportation Co. (a pipe line), and perhaps also to shippers.3
1875ff.	To Standard Oil Company. From the Erie at least.	10% to secure traffic.	Served in building up the company and inducing independents to sell.	Large commissions being allowed the Empire Transportation Co. by the Pennsylvania.4
1877-9	To Standard Oil Co. and plants under its control. From all roads.	10% on crude oil. In addition, in 1878-9, 22½ cents per barrel on all crude oil shipped. For service as evener.	Effective in driving independents out of business, who had entered refining with the high prices of 1876.	Only the Standard received these rates. It alone could keep peace between the roads.5

1. Most of the sources giving evidence of these rebates have already been cited in the text. The others are referred to under the different cases given.

2. Ida M. Tarbell, *History of the Standard Oil Company*, 1904, vol. i, p. 100, and appendix 14.

3. *Ibid.*, appendix 18.

4. *Ibid.*, appendix 26.

5. *Ibid.*, vol. ii, pp. 8-11, and *Report of the Industrial Commission*, 1900, vol. i, p. 698.

§ 5. Mr. Moody in his "Truth about the Trusts," calls the Rockefeller financiers "the real fathers of the trust idea in this country." Mr. Rockefeller and his associates were in the possession of a great industrial idea, Combination, and were pioneers in the field. The development of this trust idea is the central feature of his career; and a study of how the trust or combination was organized, and how its advantages as buyer, transporter, refiner and seller of oil have been worked out, should afford a fairly clear view of the essential causes of his fortune.

(a) The unrestricted competition of the early seventies in oil refining as in other great industries of the country, demanded some working agreement between the concerns interested if great overproduction was to be avoided, if alternate periods of speculation and shut down were to be prevented and steady profits insured. The steel industry in the seventies and eighties is a good example in another line of activity of extensive building of plants in prosperous times, followed by failure when depression came. The common form of agreement resorted to at that time to regulate competition was the pool; but its permanence and value in most cases is well shown by the fate of the refiners' pool in 1872-3. Mr. Rockefeller realized in 1873 the supreme importance of combination. He saw the economies of the large sized plant in his own refinery at Cleveland; he had experienced the losses from competition; and he knew from the case of the South Improvement Company the favors which the large shipper could secure from the railways. He also had a striking example before him to show the futility of the pool. Under these circumstances he and his associates appear to have gone to work to build up a combination which would control the oil industry and would endure. By 1876, as we have seen, most of the refineries were combined through actual ownership by the Standard Oil or allied corporations or through lease of their plants to the Central Refiners' Association. In 1882 the organization was made more permanent and uniform by the formation of the famous Oil Trust, the first of the Trusts. This was no halfway measure in combination, but amounted to securing control of practically the entire industry and giving it a solid organization. The trust was dissolved by the courts in 1892; but the organization seems to have continued under a community of interest plan of the few men who made up the majority stockholders until it was again given permanent form in 1899 as a New Jersey holding corporation.

The methods which have been used to build up an efficient and monopolistic business we may discuss under two heads: first, those involving economic benefits to the community; second, methods not involving such benefits, methods often spoken of as monopolistic. It is the purpose to show in each case what is the value of the trust idea, what particular effectiveness the size of the concern has given to the methods used.

(b) The Standard Oil Company has done admirable constructive work along the lines connected with the handling of petroleum. First, in regard to the pipe-lines. As early as the sixties these were used to carry oil from the wells to the railroads and replace the expensive process of teaming. In the seventies, a few large companies had secured control of the greater part of these lines running from the scattered wells to railroad terminals. The Standard bought up several of them; and, when in 1877 the Empire Transportation Company also yielded, it had fairly complete control of the business. Since then it has ably fulfilled the duty of supplying all new wells with pipes as they have been opened up. It is an undertaking requiring large capital; and the Standard has supplied the capital. As soon as new oil fields have been discovered in Pennsylvania, in West Virginia and elsewhere, the pipe-line companies of the Standard have gone in and, at an expense of millions, provided the wells with pipes and with storing tankage.[1] The producer is allowed cash or certificates, which are redeemable at any time, for oil collected from his well; and all producers, great and small, are paid the same price.[2] A concern which is first in the field and liberal in investing capital will reap many advantages, much as does a railroad run through a new, but rich country. It will have a large traffic at remunerative rates, and will secure oil at a reasonably low figure. For a time, at least, it will be free from competition; and rival lines may not care to enter at all unless the traffic is especially heavy. Such advantages the Standard has legitimately gained in the laying of pipe-lines.

Early in the eighties it was demonstrated that pipe-lines were not only the best means for getting the oil from the wells to the cars, but were much more economical than the railroads for transportation over long distances. Here again, the Standard has in-

1. *Report of the Industrial Commission*, 1900, vol. i, p. 581 and pp. 471-4.

2. *Ibid.*, p. 285. Gunton's Magazine, Feb. 1904, vol. xxvi, pp. 102-104.

vested its capital, though not the first to build a long distance line, and today has numerous pipes from the Appalachian System to the seaboard, with one line extending west to Whiting, Indiana, and on to the Kansas field. The crude oil is pumped through these long lines from the wells to the refineries at small expense. Oil is now run from Oklahoma to be refined at New York Harbor. The refineries, then, can be built where they are most convenient to the market without regard to the location of the wells. The Standard has put its largest plants on the seaboard, convenient for the export trade, the next in size at Whiting to supply the Central States,—locations which have saved much in freight and added greatly to the profits.[1]

The Standard has also been active in developing the advantages of the large concern in the refining and sale of oil. It maufactures a very great number of by-products, and has a large plant in western New York especially for the preparation of lubricating oils. It has been successful in finding a means of freeing Lima crude oil from sulphur and making the refined article salable, a discovery which has made it possible to draw upon a very large supply of cheap crude oil.[2] It has a large and most economical establishment for the manufacture of tin cans on Long Island, convenient to the incoming tin supply from Wales. These are economies which a concern with but one or two refineries cannot achieve. Again, the Standard has agents permanently located in certain districts to supervise the sale of oil; and it prepares new brands of oil to meet the demand. It has constructed tank steamers and barges; it has built up a tremendous export trade, and competes with the oil of Russia and Sumatra in the emporiums of the world. The market is thoroughly organized.[3]

Such are the advantages which necessarily go with the large size of the company; and the Standard Oil Company is noted for the degree to which it has utilized its opportunities in this line. We may also mention in passing certain features which redound to its credit, the more so as they are not dependent on size for existence: the perfection of organization, the discipline, the pension

1. *Report on the Transportation of Petroleum*, Commissioner of Corporations, 1906, pp. 44-56.

2. *Report of the Industrial Commission*, 1900, vol. i, pp. 570 and 627. Ida M. Tarbell, *History of the Standard Oil Company*, 1904, vol. ii, p. 249.

3. *Report of the Industrial Commission*, 1900, vol. i, p. 796 and pp. 799-800.

system[1] and the establishment of working relations with the employees which have avoided strikes. This discipline and organization would, in themselves, make an effective industrial unit yielding excellent profits.

(c) The second type of methods above referred to, of which the Standard Oil Company has made use to increase its profits, are those where no general economic advantage results to society, but where the company is pursuing exclusively its own interest. The effectiveness of these methods, also, is greatly enhanced by the size of the corporation. They are not ways by which the Standard's own cost of production has been decreased and greater industrial efficiency secured, but by which the costs of competitors have been increased and the supply limited. They fall into three divisions.

First, there is the monopoly of the pipe-lines. As we have seen, these require large investments of capital; but it is not this alone that has kept competitors out. At least two other elements figure in the situation: the great obstacles which have been met by rival lines attempting to lay their pipes, and the competition they meet from the Standard, once they have been laid. As to the former, when an independent pipe-line has been planned, persons supposed to be acting for the Standard Oil Company have bought strips of land across its proposed route in the attempt to block it, litigation has been encountered to an extraordinary degree, and where, as in New Jersey, there is no law granting pipe-lines the right of eminent domain, the railroads have absolutely refused to permit the new line to cross their right of way.[2] Since one cannot go far without encountering a railroad, the independent line is made impossible or at least very expensive. Supposing, however, a rival to be in the field, the Standard will raise the price of crude oil by the payment of premiums on the oil bought under competition. If the premium be 20 per cent, the new line must pay this 20 per cent on all the oil it buys; the Standard, only on the oil it buys in that field, say 5 per cent of its total purchases. The size of the concern reduces the average of the increased cost of crude oil.[3] Because of the capital required, the

1. Gunton's Magazine, Feb. 1903, vol. xxiv, p. 164 ff.

2. *Report of the Industrial Commission*, 1900, vol. i, pp. 650-5, 697.

3. *Report of the Industrial Commission*, 1900, vol. i, pp. 394-5, 576-7. The fact that the Standard by paying premiums in competitive fields alone, can buy crude oil at an average price below that of independent firms, is of itself a monopoly advantage, which increases competitors' costs, apart from control of the pipe-lines.

opposition of railroads to the independents, and the fear of competition in the purchase of crude, there are but few independent lines; the Standard Oil Company has a practical monopoly of the pipe-lines. This is of considerable advantage to it. Since the railroad cannot transport oil as cheaply as the pipe-line, it accepts the rate the latter makes. The Standard Oil Company has fixed the charge on crude oil at several times the cost of pumping. The rate from western Pennsylvania to the seaboard has been 52.1 cents per barrel, when it seems clear that ten cents would yield a reasonable profit. The Standard, of course, merely pays to itself the charges on its own oil; and the transportation costs it perhaps five or six cents. But the independent must pay fifty-two cents. What is the result? The cost of production of competitors is raised. Rather than pay the high rates they locate their refineries near the wells, and lose the benefit of the favorable situation possessed by the Standard refineries near the market.[1] The advantages of long distance pipe-line transportation accrue almost solely to the Standard. Ethically, the situation has two aspects. From one point of view the Standard has the right to charge what it pleases for the use of pipe-lines which it owns, as not differing from the usual forms of property. The only question of wrong then is, has the Standard stood in the way of independent pipe-lines? If, however, we regard the pipe-lines as common carriers, such rates as are demanded, which are not only unreasonably high but also discriminating in that they build up the refineries of the Standard at the expense of others, are *per se* not justifiable.

The first set of those special privileges mentioned above, which the Standard has obtained, relates, as we have seen, to the purchase of crude oil at the wells and its transportation in pipe-lines to the refineries; the second is involved in the transportation by rail of the finished product to the dealers. Rebates were forbidden by the Interstate Commerce Act of 1887; but discriminations may take other forms. We have seen that the Standard's refineries are located at different points from the others, that as a result of the pipe-line charges independents cannot build at the same places as the Standard. Now, from the Standard Oil Company's refineries, the rates on oil, open and secret, are from one quarter to one and one quarter cents per gallon less to a great part of the United States than from competing refining centers,

1. *Report on the Transportation of Petroleum*, 1906, pp. 56-62, 84-88. *Report of the Industrial Commission*, 1900, vol. i, pp. 667, 594.

allowance being made for differences in distance. This is the conclusion to which Mr. Garfield comes in his report to President Roosevelt on the Transportation of Petroleum of May 1906;[1] and the facts given bear out the statement. These may seem small differences in rates; but when we remember that they apply to hundreds of millions of gallons, and that one half cent per gallon will pay for the entire cost of refining oil and yield a handsome profit, the importance is realized of rate discriminations of one quarter cent to one and one quarter cents, which will enable the Standard to sell oil with profit at a price yielding nothing to pay the costs of refining to its competitors.[2]

Third, in the sale of its products the Standard has so organized the market as to make great use of the monopoly position which results from its size. As in buying the crude oil it could pay premiums at competitive points, while buying cheaper elsewhere, so as vendor of the finished product, it can keep the price down where rivals are in the field, but charge more at non-competitive points.[3] Since to the independent refiner all points are competitive points, he has no such opportunity. The monopoly position in regard to the consuming public is very apparent. Oil is a cheap commodity; and where there is no competition the price can be raised considerably without greatly reducing the sales.

Three forms of special privilege which the Standard has secured have been mentioned. There remains a factor which has reinforced them all. The mere size of the Standard Oil Company's bank account has been a great advantage apart from any other

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1. *Vide* pp. 2 and 21 especially.

2. *Report on the Transportation of Petroleum*, 1906, pp. 33-34. Also the statements of Mr. Prouty of the Interstate Commerce Commission. Annals of the American Academy, vol. xv, pp. 46-9, January, 1900.

3. There is considerable evidence that the Standard has very generally charged more for oil where there is no competition.

(*a*) Mr. Garfield says: "After deducting the freight rate, the price of such (ordinary illuminating) oil is usually from two cents to five cents a gallon higher in the non-competitive than in the competitive fields."—*Report on the Transportation of Petroleum*, 1906, pp. xx, xxi.

(*b*) Mr. Monnett, formerly attorney-general of Ohio, has prepared a table of prices of oil in towns of Michigan and Ohio where there is competition and where there is no competition, which indicates the same state of affairs. *Report of the Industrial Commission*, 1900, vol. i, p. 317. *Vide* pp. 277 and 568-70.

(*c*) Miss Tarbell, in her *History of the Standard Oil Company*, gives further evidence in Chap. XVI, on The Price of Oil, especially pp. 218-21 (Vol. II).

consideration. It would deter the great majority from ever attempting active competition; it would insure victory in a price-cutting contest for business over any small antagonist no matter how industrially efficient the latter might be. In the great war of 1877 with the powerful competitor, The Empire Transportation Company, this capital strength was an important factor in gaining the day for the Standard Oil Company.

(d) These are the ways in which the Standard has been built up, in which the "Trust idea" has been developed,—ways beneficial, ways detrimental to the economic interests of society. Some features, however, familiar in other trusts, are to be remarked by their absence. Natural resources which have been the basis of monopoly and profit to many trusts have played but a small part in the Standard Oil Company. In fact, until 1887, it bought practically no oil lands,[1] and from 1890 to 1898 produced amounts of crude oil varying from 24 per cent to 35 per cent of the total.[2] Several reasons are given for this refusal of the company to go into the purchase of oil fields on an exhaustive scale. It seems that the fields are very extensive, and new ones are constantly being discovered. It would make it very expensive to purchase them all in any community where land has a considerable value outside of its oil resources.[3] Again, the oil trust is not protected by a tariff shutting out foreign competition. Nor has the Standard achieved the notoriety of fraudulent promotion or speculative mismanagement for the benefit of the promoter and director at the expense of the investor and stockholder. In this connection Mr. Rockefeller's testimony before the Industrial Commission is interesting.

"The dangers are that the power conferred by combination may be abused; that combinations may be formed for speculation in stocks rather than for conducting business, and that for this purpose prices may be temporarily raised instead of being lowered."[4]

Aside from these features, then, the essential elements of the trust have been worked out by Mr. Rockefeller and his associates.

§ 6. In the seventies, Mr. Rockefeller built up the Standard Oil Company into a monopoly, his means being rebates, effective

1. Ida M. Tarbell, *History of the Standard Oil Company*, 1904, vol. ii, pp. 162-3.

2. *Report of the Industrial Commission*, 1900, vol. i, p. 561.

3. P. de Rousiers, *Les Industries Monopolisées aux Etats-Unis*, 1898, pp. 25-7.

4. *Report of the Industrial Commission*, 1900, vol. i, p. 797.

organization, and a general desire on the part of the refiners to do away with competition. Since then he and others have worked out to great perfection most of the money-making features, desirable and undesirable, of a trust. When one sees this perfection,—whereas if others received intermittent rebates, the Standard received them steadily; if the producers to check competition combined in an association without duration, the Standard's association has lasted; if many firms to-day are more or less favored as a result of discriminations in rates between localities, the Standard is apparently benefitting by a whole system of such discriminations covering most of the country; finally, if there is any business in the United States which is noted for its efficient and economical methods in the handling of an article from its purchase as raw material to its sale to the dealer, it is the Standard Oil Company,—when one sees these results one cannot but realize that very great ability is at the basis of it all. The fact is well shown in the foreign trade. When it comes to exporting oil and competing with the Russian products, pipe-line and rail discriminations are out of the question. It becomes a matter of efficiency in production and sale.[1] So keen is the competition when men like the Rothschilds are interested in the Russian oil that the price has often to be reduced to cost, leaving for profits only the thorough utilization of by-products.[2] Yet nearly 60 per cent of its refined oil the Standard exports; it meets this competition and secures a return.[3] The facts justify the conclusion that Mr. Rockefeller, while not very particular as to all of his methods, is possessed of remarkable business ability, and that the great bulk of his fortune is to be accounted for on the ground of what are, to the entrepreneur, profits.

1. Any advantage the Standard may have in the better quality of American crude oil is largely annulled by its higher price. *Report of the Industrial Commission*, 1900, vol. i, p. 791.

2. *Ibid.*, pp. 566, 570.

3. It is scarcely possible to believe, as is sometimes said, that the Standard fails to profit by its foreign trade, and makes up for its losses abroad by raising prices at home. It would hardly be willing for the sake of future markets, always competitive, to sell year after year, over half its products at a loss. Nor would the 444,000,000 gallons sold for domestic use (1904) at an average net profit of 5 cents per gallon yield much more than half enough to pay the dividend declared. There must be large returns on this competitive foreign trade.

CHAPTER IV.

Abstract-Property and Large Fortunes

There is an interesting explanation of the cause of large fortunes suggested in an essay by Professor Jenks, which may be discussed by itself before opening up the problem generally. He says, with regard to the accumulation of wealth:

"Of course, we must recognize the fact that the form of holding property in the shape of stocks and bonds, and the ability thus to possess great wealth, to use it and to secure the income from it without active participation in the management of a business, is a modern condition which has made possible many of the striking phenomena of the later days. Mr. George P. Watkins in an able essay, as yet unpublished, has rightly emphasized this economic and legal condition which no one can afford to overlook,—a condition without which our modern methods of wealth-building and fortune-using would be impossible. This fact is, of course, assumed and understood throughout the entire discussion."[1]

President Eliot mentions a like economic development, though referring to it as affecting the social responsibility of the man of wealth rather than as a cause of his wealth.

"Since the Civil War a new kind of rich man has come into existence in the United States. He is very much richer than anybody ever was before, and his riches are, in the main, of a new kind. They are not great areas of land, or numerous palaces, or flocks and herds, or thousands of slaves or masses of chattels. They are in part city rents, but chiefly stocks and bonds of corporations, and bonds of states, counties, cities and towns. These riches carry with them of necessity no visible or tangible responsibility, and bring upon their possessor no public or semi-public functions."[2]

Mr. Watkins, in the essay mentioned, applies to stocks and bonds and other instruments, whereby paper ownership is sub-

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1. J. W. Jenks, *Great Fortunes*, 1906, p. 14.

The essay by Mr. Watkins has since been published. G. P. Watkins, *The Growth of Large Fortunes*, Publications of the American Economic Association, Third Series, vol. viii, No. 4, November, 1907.

2. Charles W. Eliot, *Great Riches*, 1906, p. 1.

stituted for the direct ownership of the concrete means of production, the name of "abstract-property." Whether this "abstract-property" is, or is not a fundamental cause of large fortunes, it is certain that its development has been coincident with their accumulation. The nineteenth century, and especially the latter part, has seen a great increase in stocks and bonds. Concerns of all sizes and in all lines of business have been capitalized; and municipal and state debts have greatly increased. The growth in economic thought during the century of the distinction between profits and interest,—between the return to the entrepreneur personally, and the return on the capital invested,—only reflects the corresponding divorce of management and ownership of property. This form of property, indeed, existed to a small extent in the Middle Ages; but the Industrial Revolution has been the occasion for its great growth. Concrete capital has been called for in ever-increasing quantities to assist in production, so that the members of firms have not been able to meet the demand. Abstract-property (stocks and bonds) has been selected as an excellent means for securing the necessary funds from the general field of the investing public, and turning them to a specific use. The firm, when required to enlarge its capital in order to keep up with the progress in industrial methods, is incorporated, and securities are issued, forms of abstract-property. It sells these in the open market for the cash needed for enlargement. The convenience of the securities and their legal sanction as claims upon the property make them salable, often throughout the entire country. Thus the development of abstract-property or capital has greatly facilitated industrial expansion and the general increase of wealth, and is a well-nigh indispensable factor in the modern production process.

This increase of stocks and bonds could operate as a cause of large fortunes in three ways, and no doubt has done so: first, by virtue of the convenience of these instruments as a form of holding property; second, because of the new demand thus arising for speculative enterprise in handling these securities; third, as presenting greater opportunity for fraud in the promotion and management of companies whose stock is widely held, than is possible in the closer connection of the firm.

It is to the first of these possibilities that Mr. Watkins would seem chiefly to refer. A fortune of modern size could not exist if it were not that some convenient form of wealth has been invented which reduces the responsibility and work connected with the ownership of property. Mr. Carnegie has $200,000,000 of the

United States Steel Company's bonds safely deposited and leaving him free from any onerous incidents of ownership. Such a situation could not well exist without the presence of bonds. And it is probably true that wealth in the modern form of securities is more easily cared for than in its concrete form.

But this is quite different from saying that in the absence of abstract-property the responsibility increases *pro rata* with the increase of wealth or that the labor involved in managing an estate would prove to be an effective check upon accumulation in the majority of cases. Certainly the three fortunes studied, which are among the largest in the country, would not go to prove such a proposition. Mr. Hill and Mr. Rockefeller, for a good portion of the time, have managed concrete property much greater in value than their individual fortunes; and though their wealth has been largely in the form of securities, this would seem to be a matter of convenience rather than of necessity in handling great wealth. The Astor fortune points even more strongly in the same direction. Though the estate is for the greater part composed of concrete property, land and buildings, yet for over three generations it has steadily grown and the work of building, repairing, collecting rent, etc., has been done without the burden of "management" checking its growth or leading to a cessation of the purchase of real estate.[1]

It would seem that the emphasis laid on abstract-property overlooks other ways in which estates may be run without making undue demands on the owner. He may delegate his work to stewards, as formerly, or to managers and employees today, leaving him free from the bulk of the labor of supervision. There is also the further alternative of a trust. This is a form of holding early developed, which as well as incorporation frees the real owner from responsibility.

There is, however, a modern development which has raised considerably the maximum limit of large fortunes and which may as well be spoken of here as anywhere. It is the growth of the dominance of law and order nationally and internationally and the recognition of property as inviolate. There is an investigation of French fortunes for the last seven centuries, which furnishes some excellent illustrations of the change.[2] The men of wealth, in

1. *Supra*, pp. 17-20.

2. G. d'Avenel, *Les Riches depuis sept cent Ans*, Revue des Deux Mondes, 5th period, vol. xxxi, pp. 861-86, vol. xxxii, pp. 279-309, Feb. 15 and March 15, 1906.

former times, were many of them executed and their estates confiscated. The case of Jacques Coeur is an interesting one. He was the owner of thirty manors, of lead and copper mines, of a paper mill, and of a number of ships engaged in trade. He was an enterprising merchant, worth perhaps 27,000,000 francs, the wealthiest man of his class in the Middle Ages. In 1449 he loaned 9,000,000 francs to the King; and in 1453 the rest of his property was confiscated.[1] Richelieu, on the contrary, who from his position was safe, accumulated a much larger fortune and retained it.[2] If income and inheritance taxes today should be imposed in an extreme progressive form, it would have a like effect of setting a maximum limit on fortunes.

The development of abstract-property, to state briefly the second of the three ways in which it has caused large fortunes, has contributed complexity as well as convenience to modern business. The new relation of industry to the investing public, the demand for and supply of ready capital has called for the services of a class of adjusters,—the speculators, and promoters in certain of their activities,—who use their money and credit as a reserve fund to keep this demand and supply in as normal a condition as possible. These men may truly be said to owe their wealth to the development of abstract-property. And it is an employment productive of large returns. To anticipate popular demand for securities, to advance the capital and have the paper on hand for public sale when the demand for it comes, to forestall the prosperity of one industry, the failure of another,—this involves great movements and large masses of capital; and the reward of sound judgment is correspondingly great.

But the complexities of abstract-property have furnished the opportunity for fortunes different from the just returns on speculation. The public has not been educated morally or intellectually in the "abstract" as rapidly as property has taken that form; laws have not kept pace with the change; and, as a result, fraud and swindling have been practised on a scale and with a boldness otherwise impossible. The irresponsible director, the fraudulent promoter, find in abstract-property their tools. The phenomena are familiar to every reader.

There is a fourth and indirect way in which abstract-property promotes large fortunes, by facilitating production and especially by increasing the size of the industrial unit, the corporation, and

1. *Ibid.*, vol. xxxi, pp. 871-2.
2. *Ibid.*, vol. xxxi, pp. 869-70.

so enlarging the "captain of industry's" field of operation and his gains; but this must be left to the next chapter. It resembles the effect of increased transportation facilities on a manufacturing plant, and is one of many such modern developments. It does not, however, seem to be referred to in the quotation with which this chapter commences.

Taking together, however, the three ways that have been mentioned in which fortunes are directly influenced by abstract-property, it still seems that its development is secondary among the environmental changes which make the present the age of great fortunes. The second and third ways only apply to a limited class of fortunes; the first, though of general application, would seem not to be really fundamental. A more important change is the growth of the great industrial processes with the accompanying demand for captains of industry and for capital. The enormous production of wealth and the centralized form of industry offer opportunities for Titanic feats in improved management and increased output. But this is a matter for the next chapter.

CHAPTER V.

The Economic Causes of Large Fortunes

§ 1. When it comes to discussing the theory of the problem of large fortunes it is not easy to decide from what standpoint it is to be most effectively attacked. We may begin, however, with a simple question. In looking back over the three fortunes discussed, and the process of accumulation, what appears to be the most general and important element? Is it the presence of a protective tariff, the exploitation of a new country, monopoly or the gradual accumulation by saving and re-investing the interest return? May we not generalize and say that the most characteristic feature is the position of the men themselves as leaders in large enterprises, as captains of industry: Astor, the fur trader; Hill, the railroad builder; Rockefeller, manufacturer and dealer in oil? And the same probably is true of the majority of modern fortunes. But what have been the conditions in more recent times, which have produced the phenomena of single men controlling such large undertakings? To answer this question we must sketch briefly the history of the development of the entrepreneur,—his evolution.

Men have been engaged in business from time immemorial, and they have been engaged for a profit. In the Middle Ages it appears that the men of wealth were not the business men, however, but the titled nobility, the owners of the land. Yet it is from the master workman, rather than from the landlord, that a modern captain of industry will trace his economic descent. The field occupied by such an artisan was very limited; nor could he enlarge it. He worked in a small shop with a few apprentices whom he supervised. The modes of manufacture were stereotyped, the product small and the market small. The guild rules were strict and regulated manufacture minutely. The number of apprentices was limited; and they occupied in their turn their masters' place.

This handicraft system of manufacture and the corresponding smallness of the individual product continued long after the market

had been enlarged. Indeed it was commerce and banking rather than manufacture which first offered the opportunity for the development of large business; and during the seventeenth and eighteenth centuries we have wealthy merchants and financiers at the head of enterprises of large size whose fortunes begin to assume a place alongside the inherited estates of the nobility. There were the bankers of Northern Italy, the Fuggers in Germany, the Bank of Amsterdam, and the Bank of England. In commerce there were such organizations at the East India Company and the Hudson Bay Company, formed during these centuries when trade with the Orient and with America was developing. There were at the time also some rich men in France who acquired their wealth as tax collectors.[1] But this was a matter of royal favor and of government administration rather aside from the true development of business.

What led to the organization of commerce and banking in a few hands? It would seem to be the same causes that favor large scale production to-day. Foreign trade demanded numerous posts established abroad, a fleet of ships and men specially informed as to conditions in different countries. The equipment had to be large, and the whole well organized. This offered the opportunity for individuals or groups to develop large and renumerative businesses with which smaller outlays could not compete; it put a premium on individual initiative and ability. It made the "merchant prince." To inquire what led to the development of commerce in its turn, is a question too far afield,—the use of the compass, the geographical discoveries, etc., were fundamental causes.

Banking developed into large units for similar reasons. Here, also, foreign correspondents were required, and there was the need of funds of considerable amount. Especially was this true of those who dealt with the governments and made them loans. It was a big business and required a large house.

Astor in his capacity as trader was a product of this second period. His capital was invested in wooden sailing vessels and not in railways or factories. Indeed, Astor's trade must have been well-nigh as large and highly organized as was ever the case with an individual under the old regime. He was engaged largely in two of the most important trades of the day. The fur trade, which an unexplored and undeveloped continent offered, he de-

1. Revue des Deux Mondes, 5th period, vol. xxxi, pp. 864, 871. *Vide supra*, p. 66, note 2.

veloped to the greatest possible degree, stopped only by the Astoria failure. He entered the China trade also. Nevertheless, he is said to have made only $2,000,000 in this manner, which in comparison with modern profits shows clearly the comparative smallness of "big business" in 1800. In this same fortune towards the end of the century the superior management of one branch of the family was largely responsible for $70,000,000 increase over the wealth of the other branch.[1] Yet, Astor had as much ability as his descendants.

The obstacles Astor encountered have considerable significance in themselves as showing what limited the field then open to a trader. It will be remembered that Astor's first wealth came after "the surrender of the (Canadian) frontiers."[2] State prohibition of, or interference with trade was common enough. One need only recall the Mercantile System and the many restrictions and regulations of trade customarily imposed by the different states in those days, to realize that there were plenty of barriers to big undertakings. The Astoria enterprise illustrates another limitation, the faulty communication of the day and the risk of total loss, so that it was exceedingly difficult to securely organize and control trade over great distances from a single center.[3] As a result, the limits of possible extension were sooner reached than today. The loss of Astoria was a result of the uncertainty of communication and the risk connected with trading across the United States. The world-wide trade of the Standard Oil Company affords a good contrast.

The nineteenth century has brought about a change. Where foreign trade and finance were almost the only pursuits organized on a large scale, this is the case today in many industries; and they are organized on a larger scale than ever trade and finance were. The conditions making this possible have also made it possible for individuals to carve out business careers for themselves of great magnitude, and have produced the "captain of industry."

What has been the history of the change? With the invention of the steam engine and power machinery it was demonstrated that

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1. The reputed wealth of the family is given in the table in Chapter 1 (p. 20). This gives to the older branch $35,000,000 in 1875, and $200,000,000 in 1905, to the younger branch $20,000,000 in 1875, and $75,000,000 in 1905. The increase in the former case has been much more rapid.

2. *Supra*, p. 13.

3. *Supra*, p. 13.

this new means of manufacture, by which the product was automatically turned out in large quantities, was incomparably more efficient than handicraft; and the fall of this system took place. But the machinery to be used economically had to be grouped in bulk about a power plant, and gave rise to the factories, much larger industrial units than had previously existed. Foreign commerce was already developed to an extent to furnish the markets required by the new mills; and England manufactured for a very considerable part of the globe during the Napoleonic wars. As a result, a new class of wealthy factory owners appeared in England.

In the United States the development was similar, though somewhat later in date. Factories appeared in New England; railroads and telegraphs were built throughout the country; and considerable fortunes were made by the owners of these latest and most efficient means of manufacture and transportation. Especially was this true during the Civil War, when the government's demand for commodities raised prices and the large mill owners made great profits.

It was not, however, till after the war that the recent development seems to have attained importance, and the railroads generally, by combination or construction, to have taken the form of great systems; or the industrial combinations to have been organized. Indeed it was not until after the crisis of 1873 that the concentration of industrial control began in earnest. Just why the movement should have been so long delayed is not clear. Combination of existing roads doubtless could have taken place before that time and have resulted in considerable economies. But this may not have been known to the owners; and of course there was the further obstacle in the unwillingness of the separate organizations to surrender their identity, much like the unwillingness of states to unite. Further, it required men of considerable breadth of view and administrative power to put through the change. It may be that the Civil War, both as a school for discipline and organization and as an object lesson of the need of combined effort for military success, overcame the psychological difficulties in the way; it may have been the cumulative effect, as the advantages of larger units became constantly more and more obvious; at any rate the process of combination finally set in. The organization of the industrial trusts followed the formation of the railway systems. The entire development, of course, is based primarily upon the greater efficiency of the large unit, whether in transportation or manufactur-

ing. And with the larger unit have gone fortunes larger in proportion, the fortunes of the captains of industry of today.

The nature of this economic development as a necessary prerequisite to the acquisition of great wealth is seen in fortunes like those of Hill and Rockefeller. The growth of the Great Northern system has been that of a modern corporation. From practically nothing in 1878 it had grown by 1903, a twenty-five year period, to have 5,500 miles of track and a capitalization of over two hundred millions.[1] Cheap iron and steel, the invention of the locomotive and the telegraph, are a few of the facts which made possible the building of this road. Once these tools were available, the iron-way, expensive to build and complicated to run, could yet carry goods with a speed and at a price which the highway or the waterway afforded by the Red River could not rival. And the iron-way required a captain of industry to organize and manage it. It is this radical change in methods of doing business which accounts most largely for modern large fortunes.

There has been another development favorable to centralization in industry and to the growth of one-man power. Formerly the merchant was compelled to rely for the extension of his business on his own resources or what he could borrow from private capitalists of immediate acquaintance or obtain by discount from the bank. To-day he may incorporate the business, issue bonds and shares of stock, and by their sale obtain funds held by individuals for investment, which could not have been secured for the enterprise by the old methods. The sources of supply of capital available for enterprises which the rise of the corportaion as a form of business and the growth of a wide investing public have opened up, are much greater to-day than formerly. The captain of industry now does not wait for his own capital to grow that he may enter the large field open to him; but he draws on the available resources of several countries for that purpose. The Manitoba road was built with borrowed funds.[2] This, of course, is of great importance in bringing men to sudden and great wealth. As a result, in the case of the Manitoba, the four promoters who held the stock in a few years made several millions apiece out of $250,000 invested.[3] The process would have been much slower if they had had to rely upon their own funds, though in the end the same railroad might have been built.

1. *Supra*, p. 24, Table, p. 41, and p. 43.
2. *Supra*, p. 28.
3. *Supra*, pp. 30-1.

This is one side of the captain of industry—the side of environment. It is the more important side, however, from the point of view of accounting for their large fortunes, since what follows, applies doubtless to the men of any age. How, then, about the man himself and his methods? Competition tends to reduce profits to a level. Though there be a large unit, why should there not still be such competition among "captains of industry" as ot lead their returns to be reduced to a comparatively small figure?

One answer is afforded by a comparison of the Northern Pacific and Great Northern roads. The latter, economically run, and its traffic carefully cultivated was able to maintain dividends during the crisis of '93, while the other went into the hands of a receiver.[1] The discussion of Mr. Hill's management will be recalled. Men differ in ability; and when the different abilities are applied to running businesses whose capital is a hundred millions or more, the difference in results will appear in a very considerable total.

What were the features which were most notable in Mr. Hill's management? Good judgment in building the lines both as to location and time;[2] the development of new traffic;[3] increasing the efficiency of the road and its train-load;[4] establishing an independence of connecting lines.[5] It is to be noted that these are chiefly matters of initial organization of the plant and creation of markets. It is pretty clear now that such are the more important and remunerative features of the entrepreneur's work because the ability is rarer. The securing of men to administer or manage an established business or even to set up a new one on old lines is not so difficult a matter. Public office, for instance, is well known to broaden those who take it, so that often those who appear most unfit as candidates, if elected, do fairly well. They fall into the routine and tradition and are carried along. In management there is competition even between men of the best type; and their returns are reduced. It is seen in the fact that men may be secured to manage a large corporation like the Steel Trust for $100,000 per year, that $75,000 is a high salary for a railroad president, and that $100,000 was regarded as a dishonest return for directing a $400,000,000 insurance company. But the careers of Mr. Astor and Mr. Hill have been different. They have stood out as landmarks in

1. *Supra*, p. 39.
2. *Supra*, pp 32, 34 and 43; cf. pp. 44-5.
3. *Supra*, pp. 38-9 and 45.
4. *Supra*, p. 43, and Tables, pp. 41-2.
5. *Supra*, pp. 35 and 40 (esp. note 2)

the economic history of the country and have possessed in a rare degree constructive imagination,—witness the Astoria enterprise;[1] witness the pioneer work of Mr. Hill in creating traffic and reducing operating expenses,[2]—a quality which is not capable of general cultivation by education or experience. The breaking through of new paths for industry is a difficult matter to accomplish successfully, and being of great importance to society, is the source of large rewards.

Sometimes it is not the person who does the pioneer work who reaps the rewards, but the one who comes just after, a result due to poor judgment as to some matter of temporary but vital importance, or to unfavorable fortune. But if the pioneer does make a success of his venture he often secures the large gains to which he is entitled. This is well shown in Mr. Hill's case. The Manitoba was a new road; and for a number of years, as a result of venturing, it was without competitors. Its profits during this period of prosperity were enormous; and millions were returned to those who secured the stock for a few hundred thousand.[3]

It is important to note that these returns to organizing ability take the form of a monopoly return on the capital invested. The situation creates a justifiable form of monopoly profits, of which we shall see there are several when we come to that subject; but it also raises the question as to how far these large profits of new enterprises are justifiable, especially in cases where the monopoly is considerable. It is clear that the leader should have more than those who follow. It is clear that there should be a return to successful enterprise large enough to induce enough men to engage in "frontier" work to build up the country at the proper rate. The real need or demand of the country for captains of industry should find concrete expression in rewards coming to them. It would seem, on the whole, that the return has been adequate in this country. But this is not to say that there should be a reward to the successful sufficient to make up for the losses of all those who may wish to start new businesses. Indeed, an abnormal number of failures would seem to indicate an unduly high return to the successful. It is poor economy to set the rewards of successful enterprise so high that men are tempted to go ahead in spite of great risks and build up the country prematurely. It is poor economy for the prizes to be so large that more competi-

1. *Supra*, pp. 13-4.
2. *Supra*, pp. 43-5.
3. *Supra*, pp. 29-31.

tors enter the contest than the number for which there is any real need. It is a matter of opinion as to whether or not such has been the case in this country; but the feverish activity of times of expansion, the unchecked extension of railroads based on large land grants, and the great number of failures in times of crisis, especially on the frontier, would indicate that "profits of enterprise" have been too high.

What are the other causes, besides differences in ability, whereby competition has not reduced profits to a lower level,—the profits be it remembered of the larger unit of today? They may be grouped under the head of monopoly. In the halcyon days before government interference, a railroad had power to fix its rates according to what the traffic would bear without much fear of any immediate competition. The oil trust has been able to keep competitors out of the field; and it has earned $500,000,000 more or less, since its formation. How much of this would have been earned anyway as a result of good management, and as competitive profits; how much is monopoly profits?

Monopoly is an old story. The guilds in the Middle Ages maintained strict monopolies by fixing the price and limiting the number of apprentices. Later there were the grants of the crown, monopolies of trade and manufacture. Today we still have monopolies dependent on government act,—"protective" tariffs, patents and franchises.

Apart from monopoly elements of governmental origin, however, we have to-day others of more recent growth which bulk much larger than the old forms, and appear in the railroads and trusts. They are directly connected with the rise of large scale industry. The large capital outlay now required will give a plant a temporary monopoly before it can be duplicated, of which it may be able to make considerable use, if business is good; while the law of increasing returns gives the large concern in many industries such an advantage over smaller competitors that it is able to establish a more or less complete monopoly by virtue of its size. The basis of the monopoly of trusts and railroads and the recent development thereof, are matters of pretty general knowledge. Illustrations are better than general statements; and we may leave this important cause of large fortunes with a reference to section five of Chapter III, where the monopoly of the Oil Trust is discussed, and the influence of size, a modern feature, emphasized.[1] We would only re-

1. *Supra*, pp. 56-62.

mark again on the centralization of industry which underlies the great amount of both competitive and monopoly profits.

Monopoly profits, whether from a patent or a trust, appear superficially as returns on the plant rather than for management; and yet they are profits. They do not spring from mere possession of capital, but from the ability of the inventor or the power of organization of the business. They are not interest, but go to the entrepreneur.

The fact that there is a monopoly is not at all conclusive of unearned profits. In the case of a new enterprise it may be return for organization ability as we have seen. Again, the business may not be in a flourishing condition enough to incite competition if it were possible. Or, as in the case of the guilds and franchises, there may be a beneficial regulation of the enterprise by the authorities. In the case of patents the monopoly is granted for the express purpose of insuring to the inventor the returns for his invention to which he is regarded as justly entitled. But monopoly profits can be, and are very apt to be, undesirable in the sense of being unearned.

§ 2. Besides the entrepreneur or captain of industry, there is another type of possessor of a large fortune,—the capitalist. The former is engaged in business; the latter manages his estate. We have tried to sketch the tendencies which have brought wealth to the former. A related, yet different side of economic progress has produced the modern capitalist.

In the three fortunes described, the entrepreneur is surely in the majority. But the bulk of the Astor wealth still remains unaccounted for; and it affords a good example of a capitalist's estate. The policy adopted will be recalled,—saving of income and re-investment in real estate and good securities. Interest on investments was the important element in the growth.[1]

Capital is, of course, as important to modern business as organization and management; and capital is required in large amounts. This is the key to the development of the interest return. In the Middle Ages the dislike of any interest charge as usury shows clearly enough the slight demand for capital. There was the further check on the growth of estates placed by the danger of confiscation discussed in Chapter IV. The demand of sovereigns for funds and the need of capital in the growth of trade, changed the situation somewhat. Money was loaned to princes

1. *Supra*, pp. 20-1.

and merchants at interest for long periods. But again, it was the industrial revolution which wrought the change and raised the interest rate for the nineteenth century. Capital seeking investment being comparatively mobile, it was the general demand which affected the result. Railways, steamships, factories, machinery, the wars of the century and the development of new continents, have all called for enormous outlays of capital. If the interest rate be said to depend upon the amount left in cultivating marginal land after payment of wages, as Ricardo describes profits, then with the bringing of new land under cultivation and with improved methods of agriculture, the margin has been greatly raised and the laborer has not got all the additional marginal product. It is well known that the interest rate has been especially high in this country.

The interest return is steady; and the effect of its compounding in increasing a large fortune with lapse of time is indicated by the following table. The much greater effect, proportionately, of both the higher rates and the longer periods, is to be observed.

Table of the Period required for Capital to double, and also of the Coefficients of Increase of Capital during Fixed Periods, for Various Rates of Interest with Annual Compounding.

Rate	Period for Doubling Years	Coefficient of Increase			
		10 years	25 years	50 years	100 years
2%.....	35	1.22	1.64	2.69	7.24
3%.....	23.4	1.34	2.10	4.39	19.22
4%.....	17.7	1.48	2.67	7.11	50.5
5%.....	14.2	1.63	3.39	11.47	131.5
6%.....	11.9	1.79	4.29	18.42	339.3
7%.....	10.2	1.97	5.43	29.51	867.7
8%.....	9.	2.16	6.85	46.9	2,200.
10%.....	7.3	2.59	10.83	117.4	13,781.

One function of the capitalist, the function, the exercise of which results in the interest return, is saving; —whether or not frugality is involved depends on how much he saves. Astor cared little for present income, and was willing to wait. He was even frugal. The policy of re-investment has continued in the family; and by reason of the long period over which this accumulation of capital has continued, interest amounts to a great deal in the

fortune. Suppose we assume that Mr. Astor was worth $1,000,000 in 1805. Compounded annually at 4 per cent, this sum would have reached $50,500,000 by 1905; at 5 per cent, $131,500,000. Or on the supposition that on Mr. Astor's death in 1848 the $20,000,000 he left was set aside as a separate fund and the interest on it regularly re-invested, at a rate of but 4.72 per cent, compounded annually, it would have grown by 1905 to $275,000,000, the amount of the fortune his descendants are estimated to have had at that time.

In the Hill and Rockefeller fortunes interest has a place, since the entrepreneur, as well as the capitalist, receives interest on his investments. But in the absence of such long continued possession of wealth, it does not play so large a part, although the amount to be allowed as representing this form of income on the funds they have invested would be a very considerable sum. And these fortunes are more typical of the United States in their recent origin than that of the Astors. The Vanderbilt and the Gould fortunes date from the fifties and sixties; but in the greater number of cases of men of wealth,—railroad men, promoters, merchants, manufacturers, mine owners,—the start has been of later date. This rapid growth and the notoriously few instances of great wealth in this country continuing in a family through any considerable period, are facts which lessen greatly the importance of interest as a cause of large fortunes.

The return to the capitalist may be much more than the normal interest rate, because if he invest in a business venture rather than buy bonds, he runs the risk of loss of his capital, and the possible return must be correspondingly high to induce investment. Indeed, the average rate of return on investments where risk is involved may be above the normal interest rate, an extra return for running risk. But accidental large returns of this sort will be offset against losses; and such fortuitous returns will not play a large part in large fortunes. A man may be fortunate enough to gain considerable wealth in this way; but he is not likely to keep it if he leave it without intelligent guidance in risky ventures. The Astor estate, at all events, points in this direction. The investments, it would seem, have been highly remunerative, largely as the result of a distinct policy consistently carried out.

This is the other function of the capitalist. In most cases he will not be content with safe investment, but will seek by shrewd, far-sighted policy, so to place his funds that they may yield more than the normal interest rate and yet not be lost. He will seek

to avoid risk by management. When Astor purchased real estate, it was on the basis of a future uncertain value; and his foresight as to the growth of the city brought him large gains.[1] This is a form of enterprise, of course, and the returns are profits rather than interest; yet it is a return to capitalists, and its rise is not the same as the growth of large scale production. Land and stock speculation stand apart.

The unearned increment has been the source of great wealth in this country. The land passed at a nominal value into private hands; and the resulting increase in value, as the country developed, as cities grew, as mines were discovered, all has gone to form individual wealth. In many cases, real estate dealings have been carried on like other businesses with similar profits. In many more, the land owners have contributed as much as anyone to the building up of the community which has produced the unearned increment. In other cases, the owners have accidentally been made rich by the discovery of mines beneath their property. But in still others, this feature of our country's economic development has been made the occasion for speculation by wealthy capitalists, who by their skill in buying land merely to hold for a rise have profited above the normal.

1. *Supra*, pp. 15-16.